ORDER NO. VRD9509M138

Service Manual

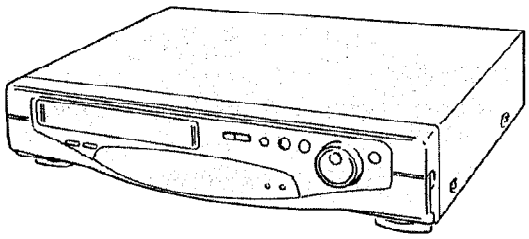
Video Cassette Recorder

General Description
Adjustment Procedures
Block / Schematic Diagrams
Exploded Views / Parts List

Panasonic VHS HQ
PAL

NV-SD450EG

K-MECHANISM



SPECIFICATIONS

ITEM	SPECIFICATION
POWER	SOURCE: 220~240 V AC 50/60 Hz
	CONSUMPTION: 18 watts
RECORDING SYSTEM	2 rotary heads, helical scanning system
	PAL
TV TUNER SYSTEM	VHF I: CHN1~CHS10 VHF III: CHE5~CHS41 (PAL/SECAM B) UHF: CH21~CH69 (PAL/SECAM G) 75Ω terminated
RF OUT SYSTEM	UHF: CH 36±6 (PAL/SECAM G) 70^{+2}_{-3}dBμ, 75Ω terminated
VIDEO	HEADS: 4 rotary heads 1 pair for recording and playback (L-R heads) 1 pair for trick play (L'-R' heads)
	INPUT: EURO AV (AV1, AV2) Connector (21 pin×2) 1.0 Vp-p, 75Ω unbalanced VIDEO IN (AV3) Connector (Phono type) 1.0 Vp-p, 75Ω unbalanced
	OUTPUT: EURO AV (AV1, AV2) Connector (21 pin×2) 1.0 Vp-p, 75Ω unbalanced
AUDIO	HEAD: 1 Stationary head (Normal-mono only)
	INPUT: EURO AV (AV1, AV2) Connector (21 pin×2) More than −6 dBV (500 mV), 10 kΩ AUDIO IN (AV3) Connector (Phono type) More than −10 dBV (316 mV), 47 kΩ
	OUTPUT: EURO AV (AV1, AV2) Connector (21 pin×2) −6 dBV (500 mV), Less than 1 kΩ

ITEM	SPECIFICATION
TAPE SPEED	SP: 23.39 mm/s LP: 11.695 mm/s Record/Playback Time: SP: 4 hours with 240 min. type tape LP: 8 hours with 240 min. type tape FF/REW Time: 2.5 min. with 180 min. type tape
OPERATING TEMPERATURE	5°C−40°C
OPERATING HUMIDITY	35%−80%
DIMENSIONS	430(W)×91(H)×312(D) mm
WEIGHT	4.8 kg
STANDARD ACCESSORIES	1 pc. DIN-RF Cable 1 pc. AC Mains Lead 1 pc. Infra-res Remote Controller

Weight and dimensions shown are approximate.
Specifications are subject to change without notice.

Panasonic

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⚠ **WARNING**

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

INTRODUCTION

This service manual contains technical information which will allow service personnels to understand and service this model.

Section 1 presents you with technical know how for actual servicing and general information of features and controls, enabling you to become familiar with each function.

Section 2 presents to your mechanical and electrical adjustment information as well disassembly and replacement procedures.

In the case of very common information relating to other models like mechanical adjustments, please refer to the appropriate service manual.

Section 3, 4 contains block diagrams which provides you with information for checking and understanding each circuit. Schematic diagrams which give you detailed information such as waveforms, voltage data, function e.t.c. ...

Section 5 contains exploded views and parts list.

Please place orders using the parts list and not the drawing reference numbers.

If the circuit is changed or modified, this information will be followed by supplementary service manual to be filed with original service manual.

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SECTION 1
GENERAL DESCRIPTIONS

1-1. SERVICE INFORMATION

1-1-1. CHANNEL MEMORY IC INITIALIZATION

When replacing the memory IC7704, its IC should be initialized.

Note:1) It should be performed before tuning.
2) Meaning of "INITIALIZATION" is to make dependency in different models and to distinguish between different features.

Method:
1) Connect a jumper wire (K2501) which has been cut as shown below.

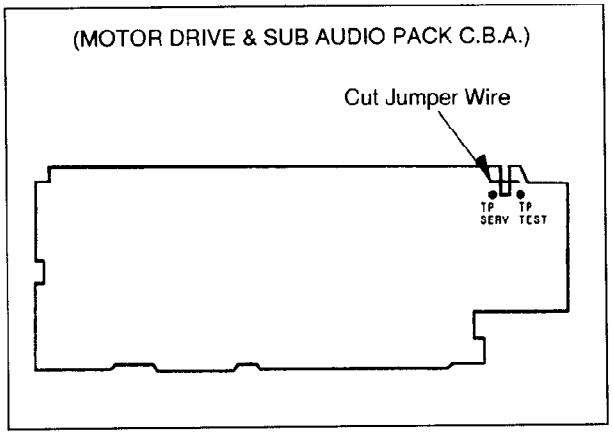


Fig. S1

2) Press the "FF", "REW" and "EJECT" buttons to set the Service Mode. (Test Mode will be appeared on the monitor TV.)
3) Set the Model Code for this model by using 10-key on the Remote Controller Unit as follows.
4) After finishing the initialization, cut the K2501 and cancel the Service Mode.

		NV-SD450EG
Code No.	IR	097
	OSD	096

Note:1) Set to IR No. when there is OSD button on the Remote Controller.
2) Set to OSD No. when there is not OSD button on the Remote Controller.

1-1-2. SERVICE POSITION

A. CHECKING OF MAIN C.B.A.

When servicing the MAIN C.B.A., take out the MAIN C.B.A. and mechanism from the frame and turn over.

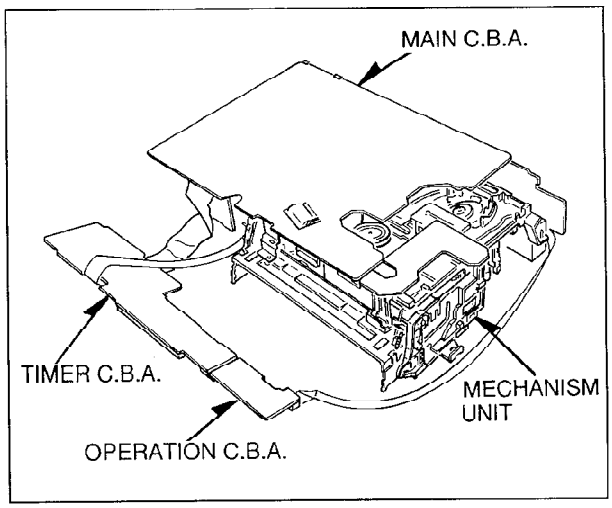


Fig. S2

B. MECHANISM SERVICE POSITION

When servicing the K-Mechanism, take out the mechanism from the MAIN C.B.A. and connect Extention Cable (VFK0889) between the loading-motor connector and P2001 as shown below.
In this position, the following services are possible.

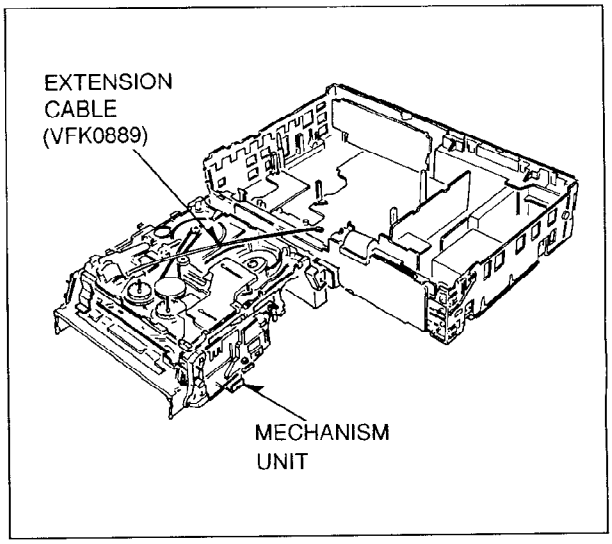


Fig. S3

B-1. CHECKING OF GEAR PHASE ALIGNMENT CONDITION

1) Check gear phase Alignment Condition of Mechanism.

B-2. CHECKING OF LOADING/UNLOADING OPERATION

There are 3 methods for manual operation of loading/unloading operation as follows.

1. HAND OPERATION
   1) Turn the Worm Gear or the Worm Wheel Gear (Remove the Loading Motor Unit) manually.

2. BATTERY OPERATION
   1) Remove the Extention Cable (VFK0889).
   2) Connect the Battery (Manganes-Type R6 (AA) 3pcs./+4.5V) to the Loading Motor terminals.

3. SERVICE INFORMATION DISPLAY OPERATION
   1) Set the Service Information Display mode.
      Turn the Shuttle Ring to FF then push the EJECT button.
   2) Turn the Shuttle Ring to FF then push the EJECT button 7 times to set the Service Mode 7. (The end of display on the Display becomes "--".)
   3) In the above Service Information Display mode, the Loading Motor rotates for Loading operation when the "PLAY" button is pressed.
      The Loading Motor rotates for unloading operation when the "STOP" button is pressed.

Remark:
Use the "SERVICE INFORMATION DISPLAY" mode for a final check of mechanism movement.

B-3. CHECKING OF REEL GEARS OPERATION

1) Move the mechanism to "PLAY" position by loading operation. (Refer to B-2)
2) Turn the Capstan Rotor Unit to check movement of reel gears.

1-1-3. INPUT/OUTPUT PACK AND MOTOR DRIVE & SUB AUDIO PACK C.B.A.s SERVICE POSITION

Use the extension cables when checking.

PART NO.	PART NAME	PCS	CONNECTION
VFK1139	20-PIN WIRE CABLE	1	PP3901 (MAIN) – PS3901 (I/O)
VFK0678	18-PIN WIRE CABLE	1	PP3902 (MAIN) – PS3902 (I/O)
VFK0917	11-PIN WIRE CABLE	1	PP2001 (MAIN) – PS2501 (M. DRIVE)
VFK0918	17-PIN WIRE CABLE	1	PP2002 (MAIN) – PS4701 (M. DRIVE)

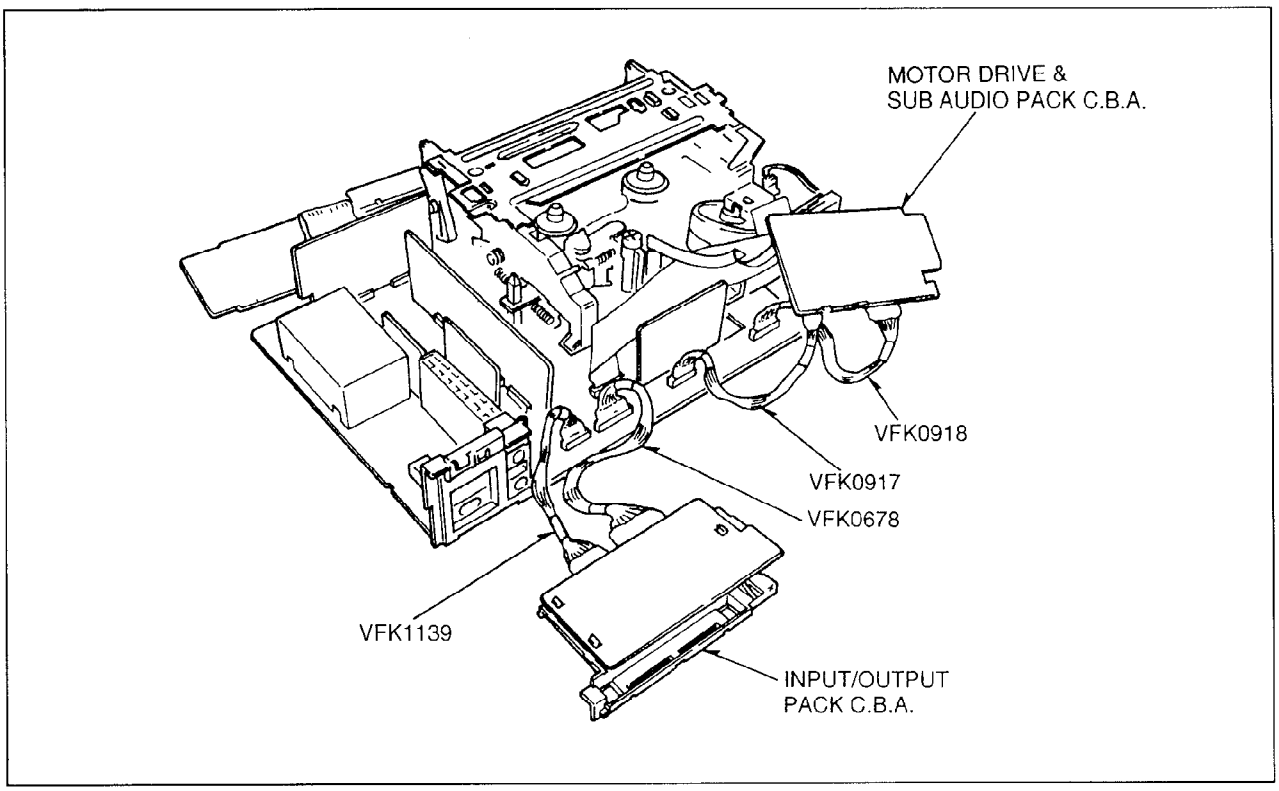


Fig. S4

1-1-4. TDD CYLINDER UNIT REPLACEMENT

The Cylinder Unit can be replaced easily by the following method.

1) Remove the Top Panel.
2) Remove the 2 screws (RED) of Head Amp Mount.
3) Remove the Earth Plate.
4) Remove the 3 screws of the Cylinder Unit with a magnetized screw driver through the holes on the Bottom Plate as shown below.

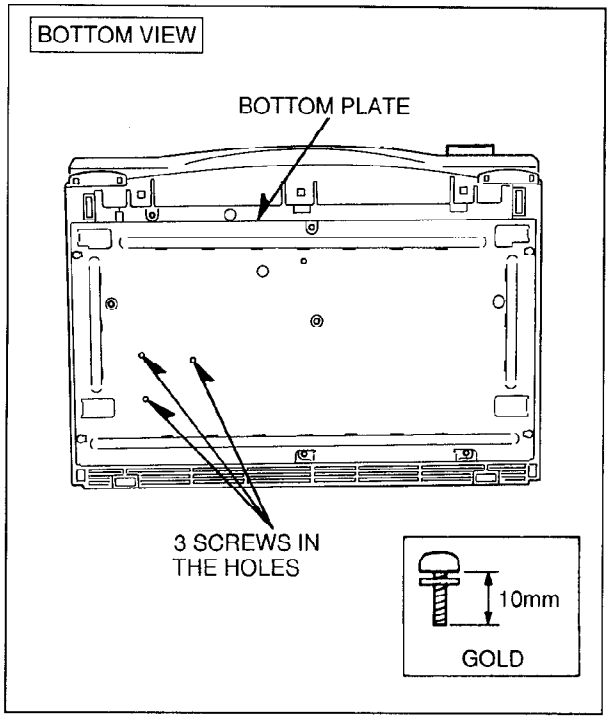


Fig. S5

1-1-5. FLAT CARD CABLE INSTLLATION

When installing the Flat Card Cable on the connector, install the Flat Card Cable with the cable contacts facing the connector contacts.

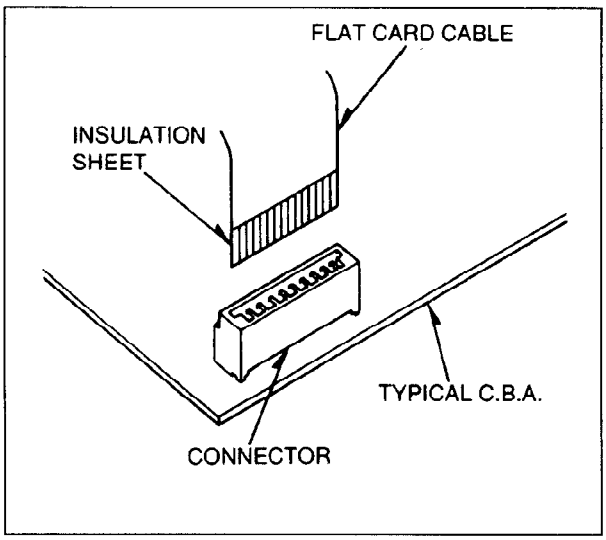


Fig. S6

1-1-6. CAPSTAN STATOR UNIT ASSEMBLY

When replacing the Capstan Stator Unit, the Centre Fixing Tool (VFK0851) must be used to fix the centre of Capstan Stator Unit.

Method:
1) Place the Capstan Stator Unit into position.
2) Loosely tighten the 3 screws.
3) Insert the Centre Fixing Tool (VFK0851) as shown below.
4) Tighten the 3 screws.
5) Remove the Centre Fixing Tool.

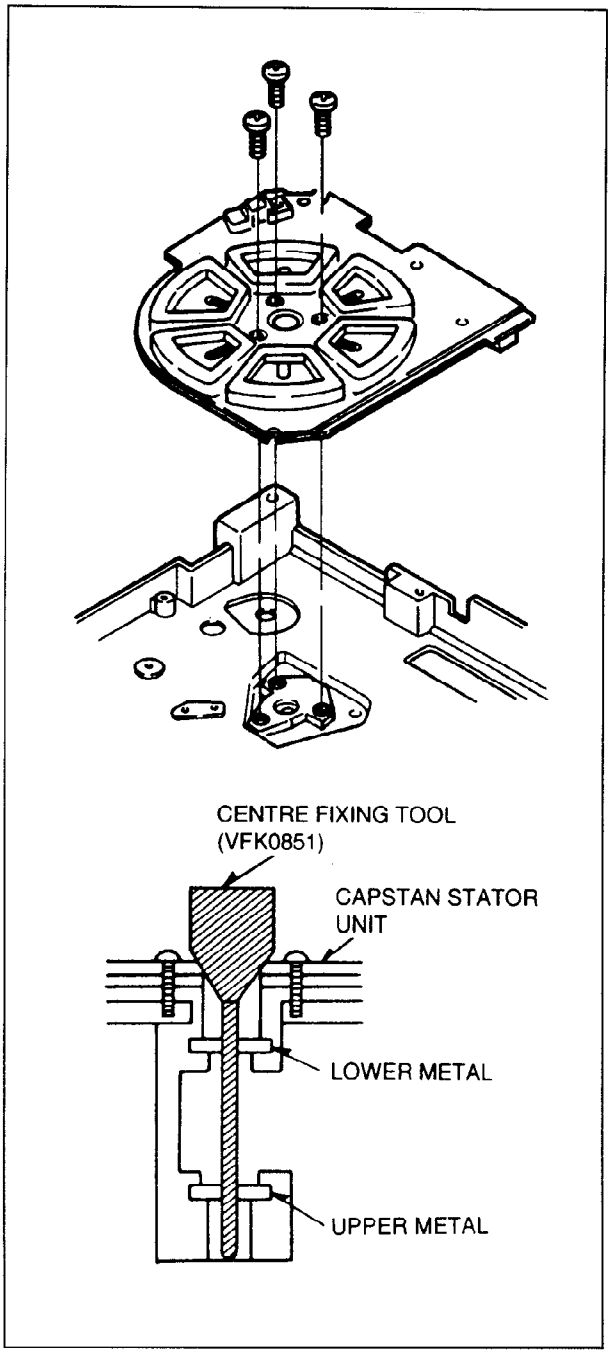


Fig. S7

1-1-7. EJECT OPERATION

The main cam gear rotates in the direction of the arrow. The projection (B) of the carriage connection gear engages with the recession (A) of the main cam gear. The carriage connection gear rotates in the direction of the arrow to perform the Eject operation.

<NOTE>
If the Eject operation is performed without the cassette carriage installed while repairing or making the mechanical phase alignment, the main cam gear will not engage with the carriage connection gear and will not rotate.
To perform the Eject operation with the cassette carriage not installed, it is necessary to rotate the carriage connection gear by hand in the direction of the arrow.

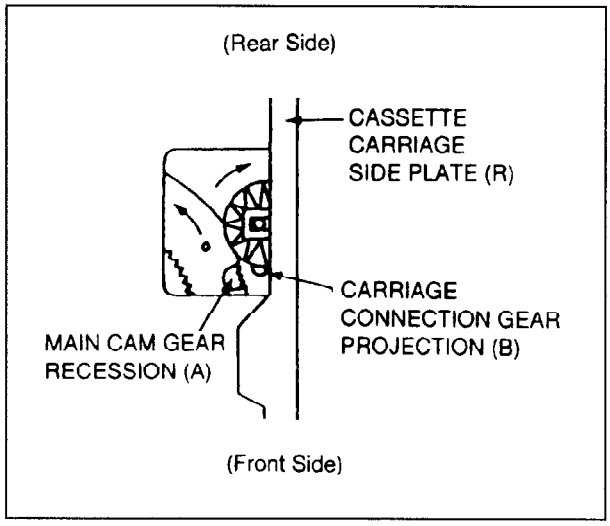


Fig. S8 Top View of Eject Operation

1-1-8. TAKE-UP PHOTO SENSOR OPERATION

Note the following matters for Take-up Photo Sensor Operation.

1) While servicing of the K-Mechanism, the unit will not operate properly if a strong light (ex, Fluorescent light, Spot light) falls on the Take-up Photo Sensor. In this case, cover the Take-up Photo Sensor to prevent the light from falling on it.
2) While servicing of the K-Mechanism with "Power On" and without cassette tape inserted, the Unit does not operate properly.

1-1-9. REMOVAL OF THE CASSETTE TAPE

If the electrical circuit is defective and the action of unloading and front unloading do not work properly, it is possible to remove the cassette manually. There are 2 methods of removing the cassette.

1. HAND OPERATION

1) Take out the mechanism from MAIN C.B.A.
2) Turn the Worm Gear manually, moving the Loading Post to the unloaded position.
3) Turn the Capstan Rotor Unit clockwise to take up the tape.
4) Turn the Worm Gear again to eject the cassette.

2. BATTERY OPERATION

1) Take out the mechanism from Main C.B.A.
2) Connect the Battery (Manganes-Type R6 (AA) 3pcs./ +4.5V) to the Loading Motor terminals as shown below.
3) After moving the Loading Post to the unloaded position, disconnect the battery to stop the motor.
4) Turn the Capstan Rotor Unit to clockwise to take up the tape.
5) Reconnect the battery to eject the cassette.

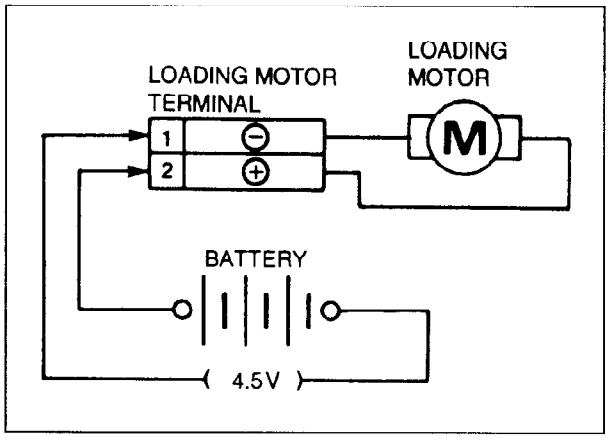


Fig. S9

If the cassette tape can not be removed by the above 2 methods, remove it by the following method.

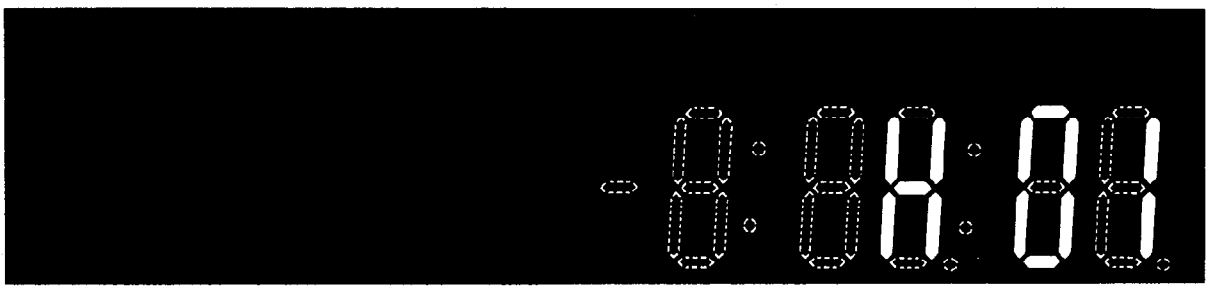
1) Remove the Top Panel.
2) Remove the Front Panel Unit.
3) Lift up the Pinch Arm after removing spring.
4) Push the P5 Arm and remove the cassette tape from tape transportation (P1, P2, P3 and P5 Posts).
5) Turn the Capstan Rotor Unit to take up the tape.
6) Remove 1 screw from the Side Plate (R) Unit to disconnect the Rack Gear from the Carriage Connection Gear.
7) Take out the cassette tape from the Cassette Compartment.

1-2. SELF-TEST INDICATION DISPLAY

This VTR has a self-diagnosis and display function. If the VTR detects trouble during installation or during use, one of the following Fault Indication Codes will automatically appear in the VTR display. Fault Indication codes are displayed in the form of a single English letter followed by two numbers, as for example "H01".

Note:1. The indication "U" is displayed on the FIP while power remains on.
2. Otherwise, the indication "H" or "F" is displayed on the FIP, and the power is automatically turned off. When the power is turned on again, the Fault Indication Code will disappear and the unit will return to normal display mode (either clock or counter).
3. This Fault Indication Code will be stored in the Timer microprocessor even with the AC plug disconnected.
The two-digit number portion of the stored Fault Indication Code can be redisplayed in the FIP's "second" display position (the last 2 digits on the light) by placing the unit is Service Mode Number 2 when turning on Service Information Display as for example "01" or "02" etc.
If a second error occurs, only the most recent error will be displayed and stored.
4. To erase the stored Fault Indication Code data, Turn the Shuttle Ring to FF then push the EJECT button for 5 seconds.

〈FIP〉



INDICATION	CAUSE	REMEDY/CHECK
U 10	Dew formation.	Wait until the indication disappears.
H 01	After cylinder lock is detected, the cylinder does not start rotating again even after tape unloading.	Check the cylinder-motor drive circuit.
H 02	Cassette tape is not wound up during tape unloading except Eject mode.	Check the capstan-motor drive circuit.
F 03	Mechanism locks during mode transition except Eject mode.	1. Check the loading-motor drive circuit. 2. Check the mechanism phase alignment. 3. Check the Mode Switch.
F 04	Mechanism locks during tape unloading.	1. Check the loading-motor drive circuit. 2. Check the mechanism phase alignment.
F 05	Cassette tape is not wound up during tape unloading in Eject mode.	1. Check the capstan-motor drive circuit. 2. Check the Supply/Take-up reel pulse.
F 06	Mechanism locks after tape unloading in Eject mode.	1. Check the loading-motor drive circuit. 2. Check the mechanism phase alignment for Cassette Holder Unit.
F 09	No serial clock transmission between IC6001 and IC7501.	Check the serial clock circuit.

Fig. T1 Self-Test Indication Display

1-3. SERVICE INFORMATION DISPLAY

〈FIP〉

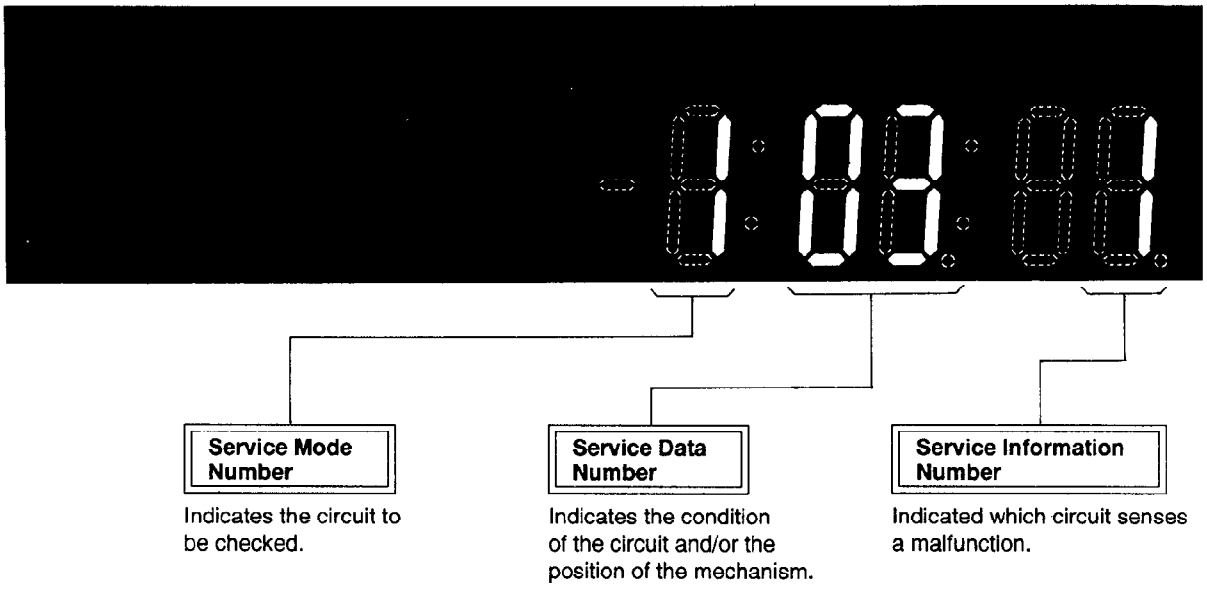

Service Mode Number
Indicates the circuit to be checked.
Service Data Number
Indicates the condition of the circuit and/or the position of the mechanism.
Service Information Number
Indicated which circuit senses a malfunction.

Fig. D1 Service Information Display

1-3-1. Purpose of Service Information Display

This information aids trouble shooting by indicating the source of the malfunction. The service mode number & service data number are used by the technician during repair while the service information can be used by the consumer to diagnose malfunctions allowing the technician to provide a more accurate repair cost estimate and reduce repair time.

1-3-2. Turning on Service Information Display

There are two ways to turn on the Service Information Display.

(1) Turn the Shuttle Ring to FF then push the EJECT button.
(2) Connecting a Jumper wire between TPSERV and TPTEST will display the service information indefinitely.

In the Service Information Display, there are four digits divided into 3 functions.
The first digit indicates which of the 8 service modes that the unit is currently in.

MODE 1 : Checks tape protection circuit
MODE 2 : Checks tape transport mechanism
MODE 3 : Checks mode switching operation
MODE 4 : Checks control buttons
MODE 5 : Checks capstan motor
MODE 6 : Checks cylinder motor
MODE 7 : Checks loading/unloading operation
MODE 8 : Not used.
(The MODE 8 is displayed only when connecting a jumper wire between TPSERV and TPTEST.)

The second and third digits are service data which indicate the condition of the circuit or mechanism being checked.

The forth digit is the service Information display. It is to be used by the consumer to help determine the source of a malfunction. The service information display operates independently of the service modes and stores the fault indication in memory for as long as AC power is not supplied.

1-3-3. Use of Service Modes

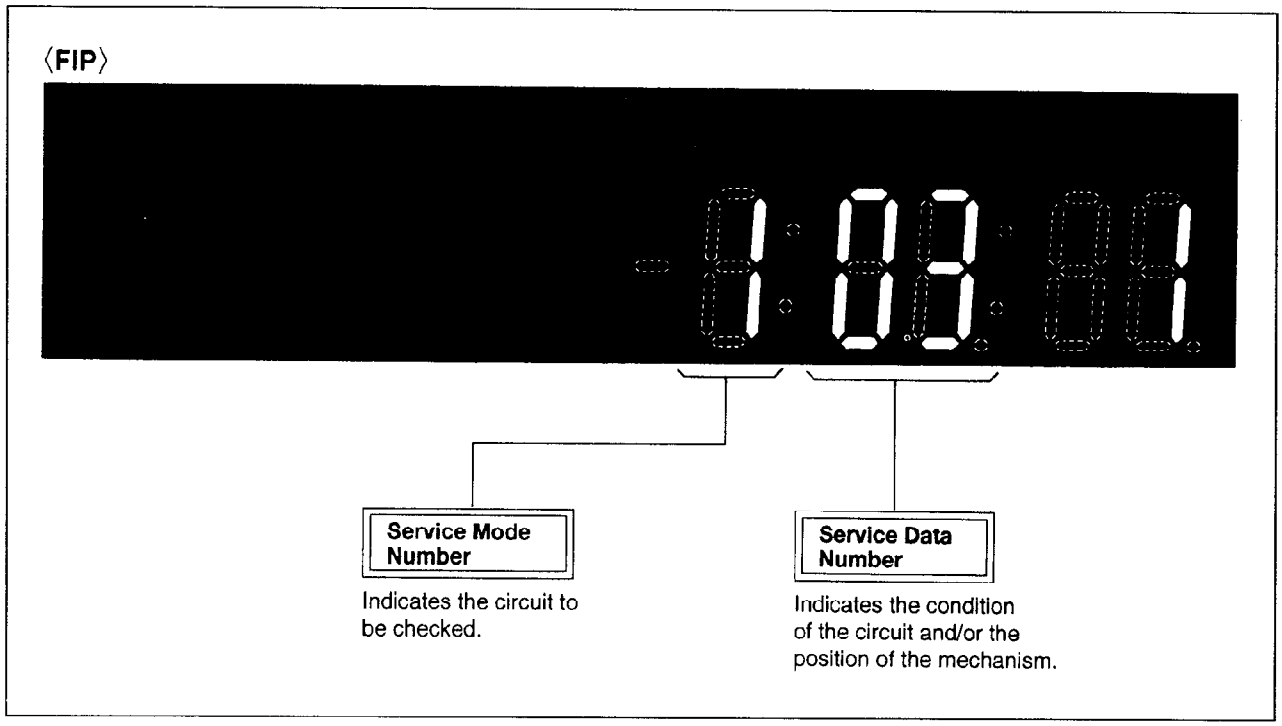

⟨FIP⟩
Service Mode Number
Indicates the circuit to be checked.
Service Data Number
Indicates the condition of the circuit and/or the position of the mechanism.

Fig. D2 Service Mode Number and Service Data Number on S.I.D.

(1) Turn on Service Information Display.
(2) To change Service Modes press the "FF", "REW" and "EJECT" buttons simultaneously.
(3) Mode 1 : Checks that the Sensor LED, Supply & Take-up Sensor circuits check the circuits by blocking the light from the Sensor LED to either or both Supply & Take-up Sensors.
When the light is blocked to both sensors, "00" should be indicated on the service data number.
When the light is blocked to the supply sensor, "01" should be indicated.
(4) Mode 2 : Checks the mode switch circuit while indicating mechanism position.
Service Data Numbers indicate the position of the mode switch and there by the mechanism position.
(5) Mode 3 : Checks that mode switch circuit operations have been completed.
Service Data Number should indicate "00" after each mechanism operation is completed.
(6) Mode 4 : Checks the operation circuit.
Indicates if IC6001 receives the operating commands from the mode buttons and/or remote controller.
(7) Mode 5 : Checks the capstan motor circuit.
Indicates if the IC6001 has received the command to rotate the capstan motor.
(8) Mode 6 : Checks the cylinder motor circuit.
IC6001 has received the command to rotate the cylinder motor.
(9) Mode 7 : Checks the Loading/Unloading Operation.
The Loading Motor rotates for loading operation when the "PLAY" button is pressed.
The Loading Motor rotates for unloading operation when the "STOP" button is pressed. This mode can be displayed indefinitely until the OPERATE button is pressed.
(10) Mode 8 : Not used.

<NOTE>
Refer to Fig. D5 for details of Service Data Numbers.

1-3-4. Service Information Number

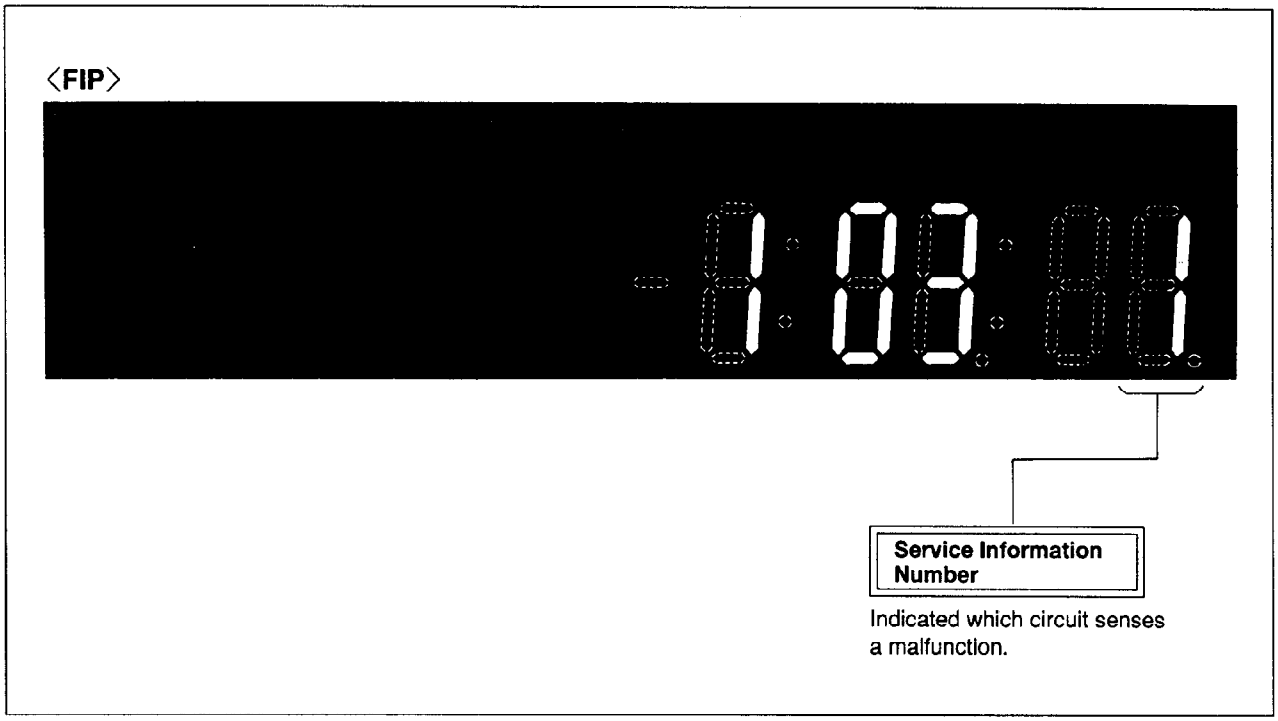


Fig. D3 Service Information Number on S.I.D.

Refer to Fig. D4 for details of Service Information Number.

Note:
The Service Information Number display is independent of the service mode display.
The Service Information Number will be stored as long as AC power is not supplied. (If can be displayed in the Service Mode 2.)
If a second error occurs, only the most recent error will be displayed.

Service Information Number	Malfunction
0	Normal (No problem)
1	Cylinder stop
2	Tape reel stop
3	Stop at position other than 4 or 6
4	Stop during unloading
5	Faulty capstan rotation
6	Stop during Cassette-In/Eject operation

Fig. D4 Detail Service Information Numbers

Service mode Number	Note for checking Service Data Numbers	Service Data Numbers	Indication	Remarks
1	———	00	No light detected at either sensor.	Tape not required.
		01	Tape Beginning. Light to Supply Photo Sensor is blocked.	
		02	Tape End. Light to Take-up Photo Sensor is blocked.	
		03	Light detected at both sensors.	
2	———	00	EJECT	Tape Required. *1: STOP3; The Pinch Roller is on the capstan motor shaft. *2: STOP; The Pinch Roller is off the capstan motor shaft. Refer to Fig. D7 to Check mechanism Position and timing.
		01	Cassette-down	
		02	REV, REV SLOW	
		03	Loading/Unloading	
		04	PLAY/REC, STILL/PAUSE, CUE, FWD SLOW, STOP3 *1	
		05	STOP *2	
		06	FF/REW	
		07	Intermediate position	
3	Disregard service data displayed until mechanism operation is completed. Then the display should indicate "00".	00	Any display other than "00" indicates a fault in the moce switch circuit or system.	Tape Required.
4	Display only when the operating button is pressed.	Refer to Fig. D6		Tape not required.
5	Left digit only, disregard Right digit display.	8 1 (Left Digit, Right Digit)	8, 9, u, A, −, n, L, and no display indicate that the Capstan motor "PLAY" command received by IC6C01.	Tape required. If a symbol other than those listed is displayed, a malfunction in that circuit is indicated.
	Right digit only, disregard left digit display.	8 7 (Left Digit, Right Digit)	1, 2, 3, 4, 5, 6, 7, indicate that the Capstan motor "CUE, FF, Forward Slow" commands received by IC6001.	
	Right digit only, disregard left digit display.	8 (Left Digit, Right Digit)	8, 9, u, A, −, n, L, and no display indicate that the Capstan motor "Reverse, Rew, Reverse Slow" commands received by IC6001.	
6	Left digit only, disregard Right digit display.	1 0 (Left Digit, Right Digit)	1, 3, 5, 7, 9, A, n and no display indicate that the cylinder motor "ON" command received by IC6001.	Tape required. If a symbol other than those listed is displayed, a malfunction in that circuit is indicated.

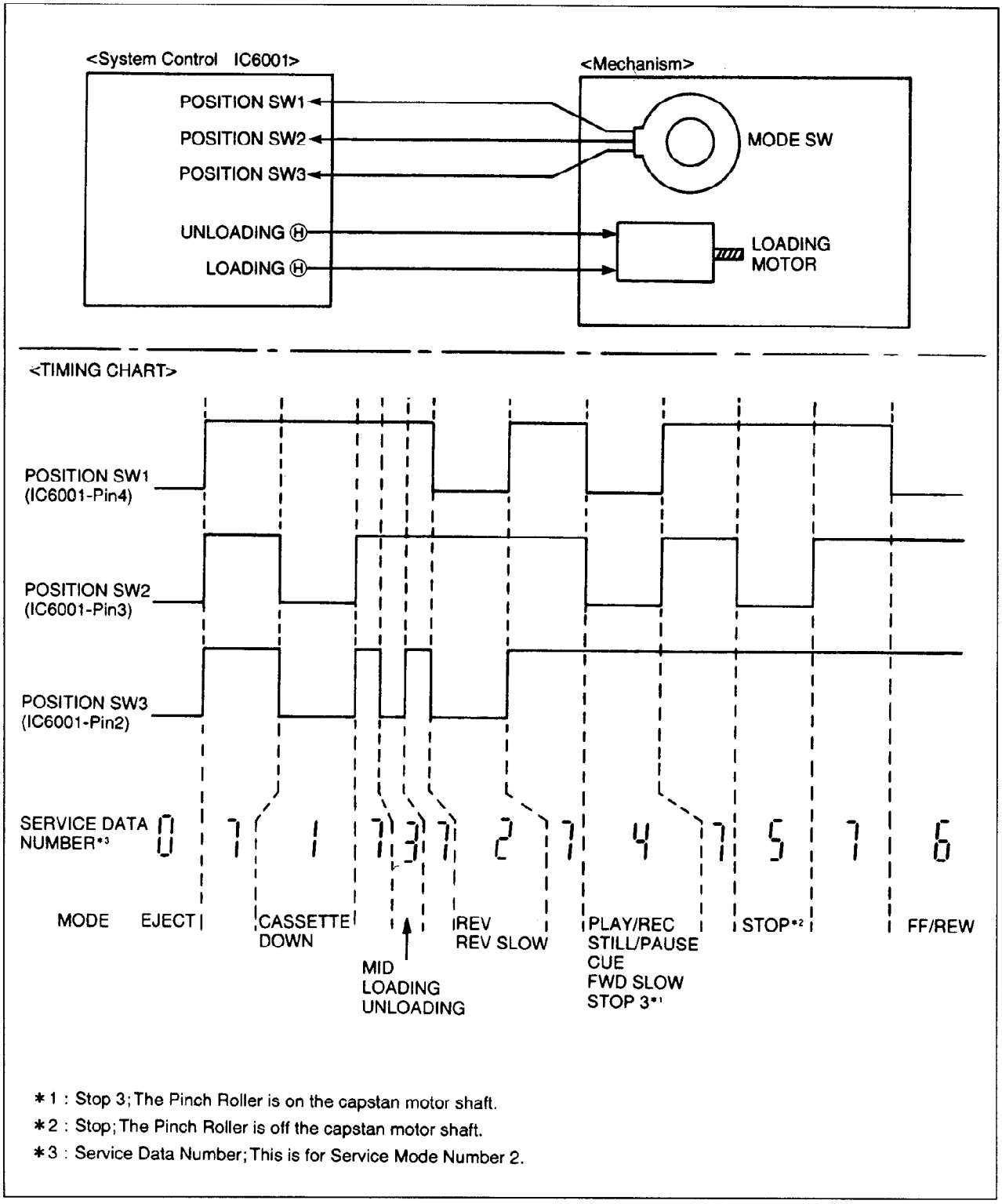
Fig. D5 Service Data Display and Indication

SERVICE DATA NUMBERS	MODE BUTTONS	SERVICE DATA NUMBERS	MODE BUTTONS
3n	OPERATE	80	PAUSE/STILL
01	EJECT	54	COUNTER RESET
-0	INPUT SELECT	5	ZERO STOP
—	SP/LP	49,4U	INDEX
34,35	∧ ∨, + −	A1,A2	TRACKING (+, −)/V-LOCK
—	CANCEL	0	SLOW
—	MENU	57	OSD
A4	TIMER REC	00	STOP
08	REC	03,02	FF, REW
33	AUDIO OUT	55	DISPLAY
—	SHOW VIEW/G-CODE/VIDEO PLUS	0U	PLAY
09	AUDIO DUB	A3	INSERT

Fig. D6 Service Data Display for Service mode 4

1-3-5. Timing Chart from Mode SW to System control IC6001

System control IC6001 senses the mechanism position through the Mode SW.
Fig. D7 shows the timing for Service Mode Number 2.



*1 : Stop 3; The Pinch Roller is on the capstan motor shaft.
*2 : Stop; The Pinch Roller is off the capstan motor shaft.
*3 : Service Data Number; This is for Service Mode Number 2.

Fig. D7 Timing Chart of Mode SW

1-3-6. Input/Output Chart for IC6001

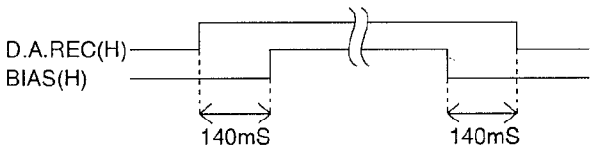
Pin Number	Input/Output	Port Name	Function
1	O	TV (H) / VTR (L)	TV/VTR switch output
2	O	FM MUTE(H)	This port is high during special playback (CUE, REV, SLOW, STILL) mode.
3	O	AUDIO MUTE (H)	This port is high during special playback (CUE, REV, SLOW, STILL) mode.
4	O	CHG KEY (H)	This port is high during variable speed playback mode.
5	O	VIDEO EE (L)	This port is low during EE mode.
6	O	SLOW/STILL (L)	This port is low during SLOW and STILL modes.
7	O	CHG AT (H)	This port is high while the auto-tracking is performed in variable speed playback mode.
8	O	VOLTAGE CHANGE (H)	This port is high while the loading motor torque is increased in FF and REW modes.
9	O	LM LIMIT (H)	Loading motor torque limitter output
10	O	FF/REW (L)	This port is low during FF and REW modes.
11	O	UNLOADING (H)	This port is high while the mechanism is unloaded.
12	O	LOADING (H)	This port is high while the mechanism is loaded.
13	O	D.A. REC (H)	Normal audio recording control 
14	O	BIAS (H)	
15	O	MIX (H)	Normal and HIFI audio mix control MIX ON : HIGH MIX OFF : LOW
16	I	SHORT CHECK (H)	DC voltage (BIAS (H)) detection • When the low voltage is detected in recording mode, the VCR is turned off. • When the high voltage is detected in except recordfing mode, the VCR is turned off.
17	I	S-VHS PB (H)	This port is high during S-VHS playback.
18	O	PB AI2 (H)	AI playback control
19	O	PB AI1 (H)	AI playback control
20	I	S-TAB (L)	This port is low while the cassette tape with safety tab is inserted.

Fig. MP1

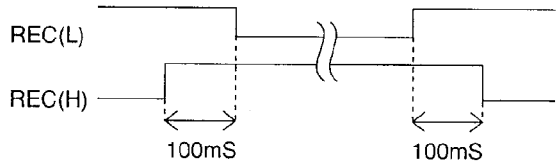
<table>
<tr><th>Pin Number</th><th>Input/Output</th><th>Port Name</th><th>Function</th></tr>
<tr><td>21</td><td>I</td><td>ABS NORM IN</td><td>HIFI audio mode detection
• When the low voltage is detected, the audio output is compulsory normal audio mode.</td></tr>
<tr><td>22</td><td>I</td><td>L CH IN</td><td rowspan="2">HIFI audio mode detection
<table><tr><th></th><th>L CH IN</th><th>R CH IN</th></tr><tr><td>L CH SEL</td><td>L</td><td>H</td></tr><tr><td>R CH SEL</td><td>H</td><td>L</td></tr><tr><td>L+R SEL</td><td>L</td><td>L</td></tr><tr><td>NORMAL SEL</td><td>H</td><td>H</td></tr></table></td></tr>
<tr><td>23</td><td>I</td><td>R CH IN</td></tr>
<tr><td>24</td><td>I</td><td>REC AI (L)</td><td>AI mode selection
AI PB ONLY : HIGH
AI PB AND REC : LOW</td></tr>
<tr><td>25</td><td>I</td><td>RESET (L)</td><td>This port is low while IC6001 is reset.</td></tr>
<tr><td>26</td><td>I</td><td>MODE SEL</td><td>Active mode selection for microprocessor</td></tr>
<tr><td>27</td><td>I</td><td>NC</td><td>Not used (Low setting)</td></tr>
<tr><td>28</td><td>I</td><td>PG AUTO (H)</td><td>PG shifter adjustment selection
AUTO ADJUST : HIGH
MANUAL ADJUST : LOW</td></tr>
<tr><td>29</td><td>O</td><td>CAPSTAN RVS (H)</td><td>Capstan motor direction selection
REVERSE : HIGH
FORWARD : LOW</td></tr>
<tr><td>30</td><td>O</td><td>REC (L)</td><td rowspan="2">DC voltage control for recording mode.
 
</td></tr>
<tr><td>31</td><td>O</td><td>REC (H)</td></tr>
<tr><td>32</td><td>O</td><td>A. DUB (H)</td><td>This port is high during audio dubbing mode.</td></tr>
<tr><td>33</td><td>O</td><td>INSERT (L)</td><td>This port is low during insert mode.</td></tr>
<tr><td>34</td><td>O</td><td>SYSTEM 3</td><td>Refer to Fig. MP. 6</td></tr>
<tr><td>35</td><td>O</td><td>SYSTEM 4</td><td>Refer to Fig. MP. 6</td></tr>
<tr><td>36</td><td>O</td><td>SYSTEM 5</td><td>Refer to Fig. MP. 6</td></tr>
<tr><td>37</td><td>I</td><td>DIGITAL 5V</td><td>VDD</td></tr>
<tr><td>38</td><td>O</td><td>12MHz OUT</td><td>Oscillator output</td></tr>
<tr><td>39</td><td>I</td><td>12MHz IN</td><td>Oscillator input</td></tr>
<tr><td>40</td><td>O</td><td>32KHz OUT</td><td>Oscillator output</td></tr>
<tr><td>41</td><td>I</td><td>32KHz IN</td><td>Oscillator input</td></tr>
</table>

Fig. MP2

Pin Number	Input/Output	Port Name	Function
42	I	DIGITAL GND	GND
43	O	FULL ERASE (H)	Full erase on/off control ON : HIGH OFF : LOW
44	O	D. REC (H)	Video signal recording on/off control
45	O	D. FM. REC (H)	HIFI audio signal recording on/off control
46	O	C. EMPHASYS (H)	This port supplies high signal during a certain time (refer to following chart) from starting the recording to control the HIFI audio recording current. TAPE SPEED / OUTPUT NTSC 2H / 6 sec NTSC 4H / 12 sec NTSC 6H / 18 sec PAL 3H / 9 sec PAL 6H / 18 sec
47	O	REC CUR 1	AI REC current switching signal output
48	O	REC CUR 2	AI REC current switching signal output
49	O	REC CUR 3	AI REC current switching signal output
50	O	A. H. SW	HIFI audio head switching signal output
51	O	S. DATA OUT	Serial data output
52	I	S. DATA IN	Serial data input
53	O	S. CLOCK	Serial clock output
54	O	5P S. DATA OUT	EDIT 5P serial data output
55	I	5P S. DATA IN	EDIT 5P serial data input
56	O	5P S. CLOCK	EDIT 5P serial clock output
57	O	CAP R/S/F	Capstan rotation direction control REVERSE : HIGH STOP :MIDDLE FOWARD : LOW
58	O	CURRENT LIMIT	Capstan motor current limitter output
59	O	ENV2	AI PB control signal output
60	O	PIC VR OUT	This port supplies the voltage which depends on picture VR setting.
61	O	ART V/H/N	This port supplies artificial vertical sync signal to stabilize the picture in special playback mode.

Fig. MP3

<table>
<tr><th>Pin Number</th><th>Input/Output</th><th>Port Name</th><th>Function</th></tr>
<tr><td>62</td><td>O</td><td>VIDEO H. SW</td><td>Video head switching signal output</td></tr>
<tr><td>63</td><td>O</td><td>ROTARY SW</td><td>Rotary switching signal output</td></tr>
<tr><td>64</td><td>O</td><td>H. AMP. SW</td><td>Head amp switching signal output</td></tr>
<tr><td>65</td><td>I</td><td>ENVE SELECT</td><td>This port receives the playback envelope signal level to select the video head in special playback mode.</td></tr>
<tr><td>94</td><td>I</td><td>T- PHOTO</td><td>This port receives the signal when take-up photo sensor detects the tape beginning.</td></tr>
<tr><td>95</td><td>I</td><td>S-PHOTO</td><td>This port receives the signal when supply photo sensor detects the tape end.</td></tr>
<tr><td>96</td><td>I</td><td>NORMAL/
SERVICE/TEST</td><td>NORMAL/SERVICE/TEST mode selection
<table><tr><td>INPUT VOLTAGE</td><td>MODE</td></tr><tr><td>MORE THAN 4.0V</td><td>NORMAL</td></tr><tr><td>2.5V~4.0V</td><td>SERVICE</td></tr><tr><td>LESS THAN 2.5V</td><td>TEST</td></tr></table></td></tr>
<tr><td>97</td><td>I</td><td>SYSTEM
SELECT</td><td>System mode selection for auto setup
<table><tr><td>INPUT VOLTAGE</td><td>MODE</td></tr><tr><td>MORE THAN 3.0V</td><td>MODE 4</td></tr><tr><td>2.0V~3.0V</td><td>MODE 2</td></tr><tr><td>LESS THAN 2.0V</td><td>MODE 1</td></tr></table></td></tr>
<tr><td>98</td><td>I</td><td>STEREO/BIL</td><td>Audio mode detection for display on the OSD
<table><tr><td>INPUT VOLTAGE</td><td>DISPLAY</td></tr><tr><td>MORE THAN 4.2V</td><td>NO DISPLAY</td></tr><tr><td>3.0V~4.2V</td><td>MONO 1</td></tr><tr><td>2.0V~3.0V</td><td>BILINGUAL</td></tr><tr><td>0.8V~2.0V</td><td>MONO 1+2</td></tr><tr><td>LESS THAN 0.8V</td><td>STEREO</td></tr></table></td></tr>
<tr><td>99</td><td>I</td><td>DEW SNS</td><td>This port is more than 1.36V during detecting the dew formation.</td></tr>
<tr><td>100</td><td>I</td><td>ATIC SEL</td><td>Head amp IC setting for playback envelope detection
<table><tr><td>INPUT VOLTAGE</td><td>IC</td></tr><tr><td>MORE THAN 3.0V</td><td>TEA5705</td></tr><tr><td>2.0V~3.0V</td><td>AN3336</td></tr><tr><td>LESS THAN 2.0V</td><td>AN3360</td></tr></table></td></tr>
<tr><td>101</td><td>I</td><td>PIC VR IN</td><td>This port receives the voltage which depends on picture VR setting.</td></tr>
<tr><td>102</td><td>I</td><td>CHROMA IN</td><td>AI PB Chrominance level adjustment input</td></tr>
<tr><td>103</td><td>I</td><td>SLTR MM</td><td>Slowtracking adjustment input</td></tr>
<tr><td>104</td><td>I</td><td>AV MODE SEL</td><td>TV/VTR switch setting
<table><tr><td>INPUT VOLTAGE</td><td>SWITCH</td></tr><tr><td>MORE THAN 3.0V</td><td>TV/VTR</td></tr><tr><td>2.0V~3.0V</td><td>NO SW</td></tr><tr><td>LESS THAN 2.0V</td><td>AV LINK</td></tr></table></td></tr>
</table>

Fig. MP4

<table>
<tr><th>Pin Number</th><th>Input/Output</th><th>Port Name</th><th>Function</th></tr>
<tr><td>105</td><td>I</td><td>TRACKING ENVE</td><td>Playback envelope input for tracking adjustment</td></tr>
<tr><td>106</td><td>I/O</td><td>EDIT TRIG</td><td>Trigger signal in/output for synchronized editing</td></tr>
<tr><td>107</td><td>O</td><td>2H (H)</td><td>This port supplies the high signal in SP mode.</td></tr>
<tr><td>108</td><td>O</td><td>T SNS LED (L)</td><td>Sensor LED drive signal output
● When this port supplies the low signal, the sensor LED is lit.</td></tr>
<tr><td>109</td><td>I/O</td><td>PREROLL</td><td>Preroll signal in/output for synchronized editing.</td></tr>
<tr><td>110</td><td>O</td><td>SYSTEM 2</td><td>Refer to Fig. MP. 6</td></tr>
<tr><td>111</td><td>O</td><td>SYSTEM 1</td><td>Refer to Fig. MP. 6</td></tr>
<tr><td>112</td><td>I/O</td><td>HIFI/MIX/NORM</td><td rowspan="2">Audio output mode control
<table><tr><th></th><th colspan="4">MODE</th></tr><tr><th></th><th>STEREO</th><th>L CH</th><th>R CH</th><th>NORMAL</th></tr><tr><td>HIFI/MIX/NORM</td><td>H</td><td>H</td><td>H</td><td>L</td></tr><tr><td>L CH/R CH/STEREO</td><td>L</td><td>H</td><td>Z</td><td>L</td></tr></table>Z: HIGH IMPEDANCE</td></tr>
<tr><td>113</td><td>O</td><td>L CH/R CH/
STEREO</td></tr>
<tr><td>114</td><td>I</td><td>DIGITAL 5V</td><td>VDD</td></tr>
<tr><td>115</td><td>I</td><td>POSITION SW1</td><td rowspan="3"><table><tr><th>P. SW 3</th><th>P. SW 2</th><th>P. SW 1</th><th>Position (Mode) Name</th></tr><tr><td>O</td><td>O</td><td>O</td><td>EJECT</td></tr><tr><td>O</td><td>O</td><td>I</td><td>CASSETTE DOWN</td></tr><tr><td>O</td><td>I</td><td>O</td><td>REV, REV SLOW</td></tr><tr><td>O</td><td>I</td><td>I</td><td>MID (LOADING/UNLOADING)</td></tr><tr><td>I</td><td>O</td><td>O</td><td>PLAY/REC, STILL/PAUSE, CUE, FWD SLOW STOP3 *1</td></tr><tr><td>I</td><td>O</td><td>I</td><td>STOP</td></tr><tr><td>I</td><td>I</td><td>O</td><td>FF/REW</td></tr><tr><td>I</td><td>I</td><td>I</td><td>INTERMEDIATE</td></tr></table>(*1) The Pinch Roller is on the capstan motor shaft.</td></tr>
<tr><td>116</td><td>I</td><td>POSITION SW2</td></tr>
<tr><td>117</td><td>I</td><td>POSITION SW3</td></tr>
<tr><td>118</td><td>O</td><td>AUDIO MODE
SELECT</td><td>Audio mode switching signal output</td></tr>
<tr><td>119</td><td>I</td><td>GND</td><td>GND</td></tr>
<tr><td>120</td><td>I</td><td>REC WIDE (H)</td><td>This port is high during wide recording mode.</td></tr>
<tr><td>121</td><td>O</td><td>WIDE (H)</td><td>This port is high during playback the tape recorded with wide mode.</td></tr>
<tr><td>122</td><td>O</td><td>AI MES (H)</td><td>This port is high when measuring the head and tape condition to determine the optimum recording current before starting the AI recording.</td></tr>
<tr><td>123</td><td>O</td><td>POWER OFF (H)</td><td>Power on/off control</td></tr>
<tr><td>124</td><td>O</td><td>TRICK (L)</td><td>This port is low during special playback (CUE, REV, SLOW, STILL) mode.</td></tr>
</table>

Fig. MP5

	MODE 1	MODE 2	MODE 3	MODE 4
PIN 111 (SYSTEM 1)	H: MESECAM L : PAL Z : AUTO	H: MESECAM L : PAL	H: PAL L : NTSC Z : AUTO	H: MESECAM L : PAL Z : AUTO
PIN 110 (SYSTEM 2)	H: EXCEPT NTSC L : NTSC-M	H: SECAM L : PAL Z : AUTO	——	H: EXCEPT NTSC L : NTSC-M
PIN 34 (SYSTEM 3)	H: NORMAL L : DBS/CANAL	H: NORMAL L : DBS/CANAL	——	H: NORMAL L : DBS/CANAL
PIN 35 (SYSTEM 4)	H: PAL- I L : B/G/D/K	H: SECAM L : PAL	——	H: PAL-I L : B/G/D/K
PIN 36 (SYSTEM 5)	H: PAL L : NTSC	H: PAL L : NTSC	H: 50Hz L : 60Hz	H: PAL L : NTSC

Z: HIGH IMPEDANCE

Fig. MP6

Note: 1. The mode is decided depend on SYSTEM SELECT PORT (PIN 97).

1-3-7. CVC (CRISTAL VIEW CONTROL) FUNCTION

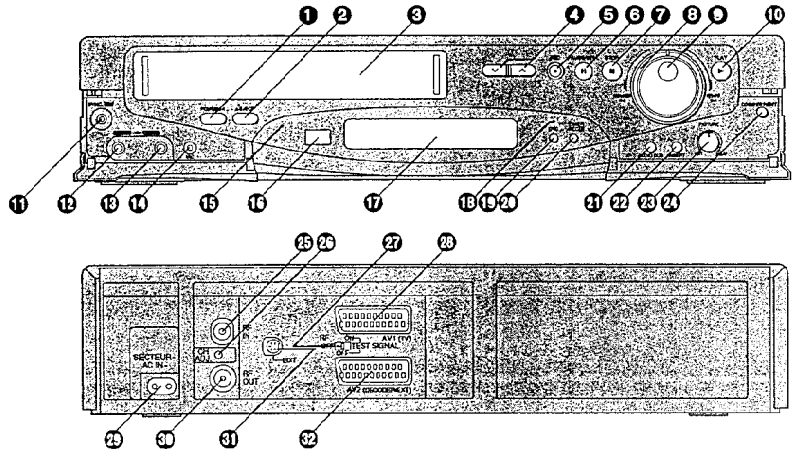
The playback are adjusted to achieve optimum picture quality from tapes with varying charactristics.

(1) Detail explanation
<Playback mode>
The picture quality is varying from the different tapes as follows:
1) If the output level is low, from worn or rental cassette tapes, a soft picture is obtained by the RF equlizer and picture control on the Lumi./Chro. Pack C.B.A.
2) If the output level is medium, from normal tapes, a sharp picture is obtained from the emphasis and picture control on the Lumi./Chro. Pack C.B.A.
3) If the output level is high, from HG/S tapes, a sharp and detailed picture is obtained from the RF equlizer, emphasis picture control and noise canceller on the Lumi./Chro. Pack C.B.A.

<Recording mode>
The optimum recording level is used for all head conditions and for all types of tapes.
1) The luminance S/N is boosted 2dB.
2) Recording head wear compensation.
3) The optimum recording current is achieved in 1.5 seconds.

Controls and Connection Sockets

This gives a detailed explanation of the function of each button, switch and connection socket.



❶ POWER ⏻/I
Press to switch the unit from on to standby mode or vice versa. In standby mode, the unit is still connected to the mains.

❷ EJECT
To eject a video cassette.

❸ Cassette Compartment
Insert a video cassette here.

❹ ∨ ∧
To select the required programme position (TV station).

❺ REC
To start a recording.

❻ PAUSE/STILL
In the stop mode: Still picture (Jog/Shuttle mode).
During playback: Still picture (Jog/Shuttle mode).
During recording: To interrupt recording.

❼ STOP
To stop any playback or recording.

❽ Shuttle Ring
In the stop mode: To rewind or fast forward the tape.
In the playback mode:
To search picture backward or forward.
In the still playback mode:
To adjust playback speed backward or forward.
In the rewind or fast forward mode:
To obtain high speed picture.

❾ Jog Dial
To locate any desired frame with utmost precision.

❿ PLAY
To start playback. "▷" is lit.
For the repeat playback function.

⓫ SYNC. EDIT
To connect a movie camera or another VTR equipped with synchronized editing capability.
To connect a movie camera or another VTR equipped with LANC socket for One-Touch-Editing.

⓬ VIDEO IN (AV3)
To connect the video cable to a movie camera or to another VTR.

⓭ AUDIO IN (AV3)
To connect the audio cable to a movie camera or to another VTR.

⓮ MIC
To connect a microphone for recording. Once connected, this socket has priority.

⓯ Standby Indicator
This indicator is lit when the VTR is turned off or the VTR is timer recording standby mode.

⓰ Infra-red Remote Control Receiver Window

⓱ Display

⓲ CVC Indicator
When the CVC function is on, this indicator is lit.

⓳ CVC (Crystal View Control)
ON: Using the CVC function, playback and recording are performed in the state which achieves optimum picture quality in light of characteristics of a tape.
- The CVC indicator is lit.
- This control should normally be left in the ON position.

OFF: Turn off the CVC function.
- The CVC indicator is not lit.

⓴ TIMER REC
To turn the timer recording function on and off.
⏲ is lit or not lit.
Once operating timer recording function, the normal VTR operation is not possible unless this button is set to off.

㉑ AUDIO DUB
To set up the VTR for audio dubbing.
A DUB is appeared on screen display.

㉒ INSERT
To set up the VTR for insert editing.
INSERT is appeared on screen display.

㉓ PICTURE
To make picture sharper (SHARP) or softer (SOFT).

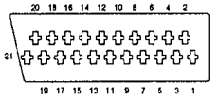
㉔ COUNTER RESET
To reset the tape counter (elapsed time) to "0:00.00".
- The tape counter is automatically reset to "0:00.00" when a video cassette is inserted.

㉕ RF IN
To connect to the external aerial.

㉖ CH ADJ.
To adjust the RF transmitting channel 30–42.

㉗ RF OFF/TEST SIGNAL
RF OFF: Set to this position when the VTR is connected to the TV via the 21-pin scart cable.
TEST SIGNAL OFF:
Set to this position when the VTR is connected to the TV via the RF coaxial cable only.
TEST SIGNAL ON:
Set to this position when tuning the TV into the VTR.
The test signal is transmitted on channel 36 initially.

㉘ AV1 (TV)
This 21-pin scart terminal carries input and output signals for both picture and sound. TV sets equipped with a similar socket can be connected here.
This is also called Scart
Peritel
Euro Connector
Euro AV



1	AUDIO OUTPUT	13	RED GROUND
2	AUDIO INPUT	14	BLANKING GROUND
3	AUDIO OUTPUT	15	RED
4	AUDIO GROUND	16	BLANKING
5	BLUE GROUND	17	VIDEO OUTPUT GROUND
6	AUDIO INPUT	18	VIDEO INPUT GROUND
7	BLUE	19	VIDEO OUTPUT
8	SWITCHING VOLTAGE	20	VIDEO INPUT
9	GREEN GROUND	21	GROUND
10	No connection		
11	GREEN		
12	No connection		

Caution: RGB reservation for only E/E operation when connecting the Pay TV decoder

㉙ AC IN~
To connect to the main power supply.

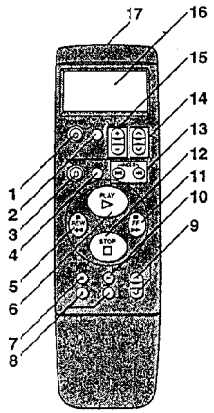
㉚ RF OUT
To connect to the aerial terminal on a TV set.

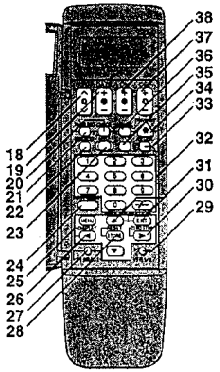
㉛ EDIT
By connecting the optional Editing Controller (VW-EC300E/VW-EC310E) to this socket, such editing functions as Assemble Editing, Insert Editing and Audio Dubbing can be performed more quickly and efficiently between two VTRs or between a VTR and a movie camera.

To connect the Edit cable (VW-K5E) to a movie camera or to another VTR for One-Touch-Editing.

㉜ AV2 (DECODER/EXT)
To connect to a decoder or another VTR.

Infra-red Remote Controller





1 POWER (TV)
To switch the TV from on to standby mode or vice versa. In standby mode, the TV is still connected to the mains.
- With some TV models, it may only be possible to switch the TV to standby mode using this button. In this case, use **TV/AV** or ∨ ∧ **(TV)** to switch the TV on.

2 TV/AV
To select the TV input.

3 POWER
Press to switch the unit from on to standby mode or vice verse. In standby mode, the unit is still connected to the mains.

4 OSD
For the On Screen Display Function.

5 REW (REWIND)
In the stop mode: To rewind the tape.
In the playback mode: To search backward.
In the rewind mode: To obtain high speed picture.
"◁◁" is lit.

6 PLAY
To start playback. "▷" is lit.
For the repeat playback function.

7 PAUSE/STILL
During playback: Still picture.
During recording: To interrupt recording.

8 REC
To start a recording.
- Press both buttons simultaneously.

9 ∨ ∧ (VTR)
To select the required programme position (TV station).

10 SLOW
For the slow motion playback function. "▯▷" is lit.

11 FF (FAST FORWARD)
In the stop mode: To fast forward the tape.
In the playback mode: To search forward.
In the fast forward mode: To obtain high speed picture.
"▷▷" is lit.

12 STOP
To stop any playback or recording.

13 INDEX
For the index search function.

14 ∨ ∧ (TV)
To select the required programme position (TV station) of the TV.

15 VOLUME
To adjust the volume of the TV.

16 Display

17 Infra-red Transmitter
The programming data are transmitted from here to the VTR.

18 ∨ ∧
To programme a timer recording.

19 DATE
To programme a timer recording.

20 CHECK
To check timer programmes.

21 TIMER REC
To turn the timer recording function on and off.
⏲ is lit or not lit.
Once operating timer recording function, the normal VTR operation is not possible unless this button is set to off.

22 SHOWVIEW
For the ShowView programming.

23 SP/LP
To select the tape speed desired for recording.
SP gives the best picture quality.
LP gives the longest recording time.

24 INPUT SELECT
To select the A1, A2 or A3 external recording source.

25 OSD Operation Buttons
MENU: To make On Screen Display Main Menu appear on the TV screen.
▲ ▼ ◀ ▶/STORE:
To make selections from On Screen Display.
EXIT: To make On Screen Display disappear on the TV screen.

26 DISPLAY
To change the indication on the VTR Display or On Screen Display.

→Clock→Counter→Remaining Tape Time→

27 TV SELECT
To set the remote controller for operation of the TV.

28 RESET
To reset the tape counter (elapsed time) to "0:00.00".
- The tape counter is automatically reset to "0:00.00" when a video cassette is inserted.

29 VTR 1/2
VTR1: Set to this position on both the VTR and remote controller for normal use with one VTR.
VTR2: Set to this position when using two Panasonic VTRs.

30 ZERO STOP
For the zero stop function.

31 TRACKING/V-LOCK
For manual tracking adjustment
The + and – buttons are used to adjust the tracking when, for example, noise bars or the picture are better removed manually than by the automatic digital tracking control. After making a manual adjustment, press both buttons together to return to automatic digital tracking control.

For slow tracking adjustment
When noise bars appear during Still or Slow playback, switch over to slow playback and adjust with the + or – Button to reduce the noise bars.

For vertical locking adjustment
Use the + and – buttons to minimize any vertical jitter during still-picture playback.

32 Number Buttons
- To select the programme positions (1–99).

9: (9)

19: (-/--) → (1) → (9)

- To programme a ShowView number.

33 AV LINK
To select the VTR mode or TV mode for AV LINK.

34 TRANSMIT
To transmit the data that has been set on the remote controller to the VTR.

35 No function.

36 CANCEL
To cancel the settings made for a timer recording.

37 OFF
To programme a timer recording.

38 ON
To programme a timer recording.

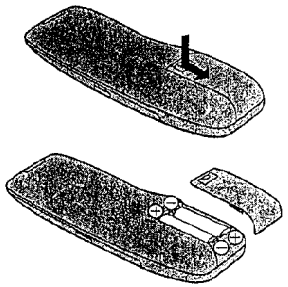
Power Source for the Remote Controller

The remote controller is powered by 2 "AA", "UM3" or "R6" size batteries. The life of the batteries is about one year, although this depends on the frequency of use.

Precautions for Battery Replacement

- Load the new batteries with their polarity (⊕ and ⊖) aligned correctly.
- Do not apply heat to the batteries, or an internal short-circuit may occur.
- If you do not intend to use the remote controller for a long period of time, remove the batteries and store them in a cool and dry place.
- Remove spent batteries immediately and dispose of them.
- Do not use an old and a new battery together, and never use an alkaline battery with a manganese battery.

Installing the Batteries

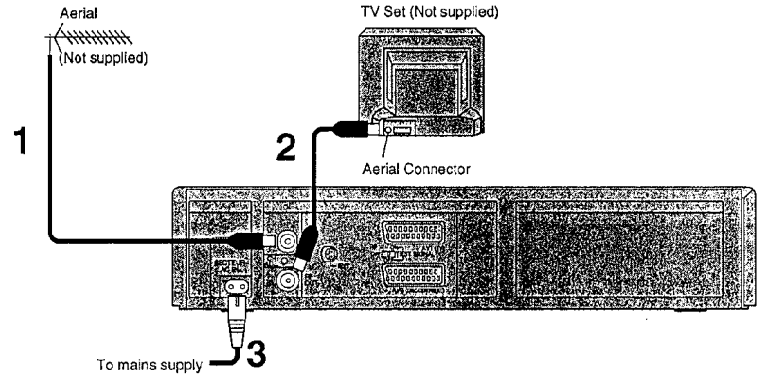


Connections

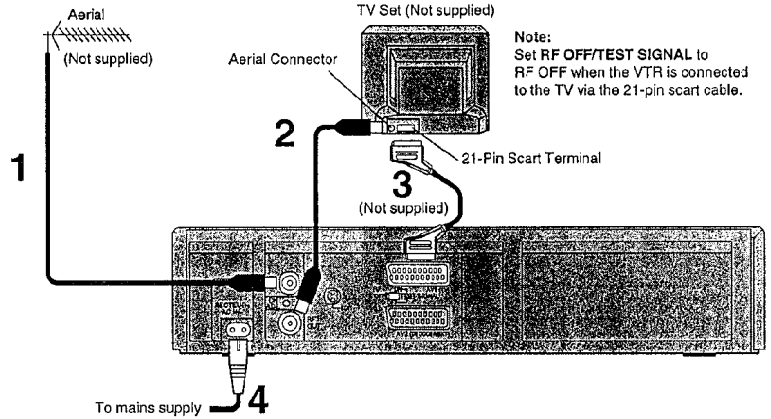
This tells you how to connect with an aerial, TV, etc.

Basic Connections

The following connections are required to record and play back the VTR through TV set:

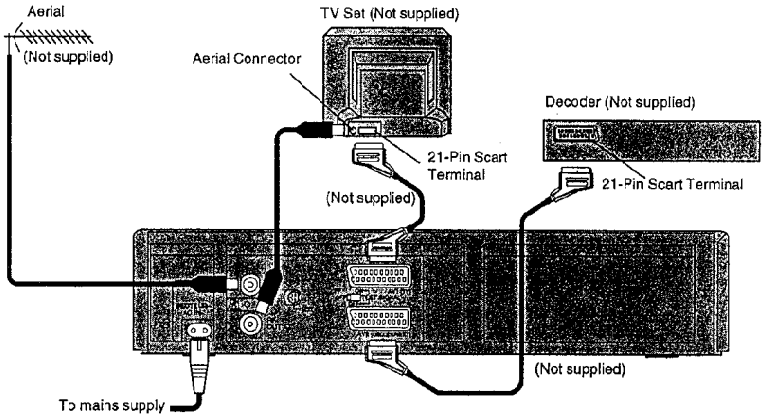


Connection to a TV Set with 21-Pin Scart Terminal



Note:
Set **RF OFF/TEST SIGNAL** to RF OFF when the VTR is connected to the TV via the 21-pin scart cable.

Connection to a Decoder



Notes:

- If the TV set is provided with an RGB-compatible connector, connect the 21-pin AV cable from the VTR to this connector. Use full-pin 21-pin AV cables for connecting the TV set and VTR and for connecting the VTR and decoder.
- Set **RF OFF/TEST SIGNAL** to RF OFF when the VTR is connected to the TV via the 21-pin scart cable.

AV LINK

With this button the connected colour TV set can be switched from TV mode to VTR mode (vice versa) when it is connected by means of 21-pin scart cable.

This makes a variety of functions possible such as simultaneous recording and viewing when a Pay TV decoder or a satellite receiver has been connected.

VTR mode (VTR indicator lights):
To enjoy sound and pictures from the VTR.

- When **MENU** is pressed and the OSD (On Screen Display) screen is displayed, the unit also automatically switches to VTR mode.
  However, if the unit is originally in TV mode, the VTR indicator is not displayed.
- The unit also automatically switched to VTR mode when playback is started. However, the unit cannot be returned to TV mode during playback.

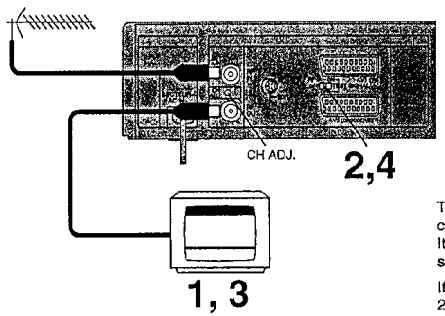
TV mode (VTR indicator goes off):
To watch another programme on the TV while recording on the VTR.

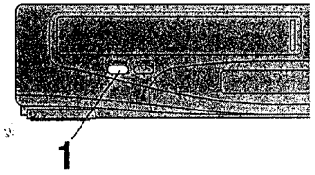
- Select the programme to be watched using the TV set's tuner.
- The sound and pictures of a different channel are received by the VTR.

	VTR	TV set
Power On	VTR mode	AV input selected
	TV mode	Input from TV set's tuner*
Power Off	—	Input from TV set's tuner

*When the VTR is set to the TV mode and the Pay TV channel is selected, the signals will still be scrambled even when Pay TV is selected by the TV set's tuner. At a time like this, either set the VTR to the VTR mode or switch the TV set's input signals to AV input.

Tuning the TV to your VTR





The VTR supplies a signal to the TV set via the RF coaxial cable on channel 36.
It is possible to view the video picture on your TV in the same way that you watch TV broadcasts.

If you have connected the VTR to the TV through the 21-pin scart terminal, then you do not need to follow the procedure mentioned below.

Operations

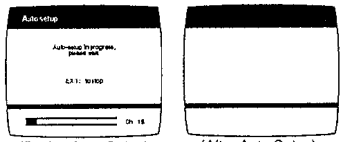
1 POWER

Turn on the TV and VTR.

2 RF ON / OFF TEST SIGNAL OFF

To generate a test pattern, set **RF OFF/ TEST SIGNAL** to TEST SIGNAL ON.

3 On Screen Display



(During Auto Setup)

(After Auto Setup)

Set the TV to an unused position which you wish to use for your video playback.

4 RF ON / OFF TEST SIGNAL OFF

Set **RF OFF/TEST SIGNAL** to TEST SIGNAL OFF.

Note:
The test signal is transmitted on video channel 36. If you are encountering interference from a TV broadcast on this video channel, you may readjust to another free channel (30–42) by using the **CH ADJ.** screw which is located on the rear of the VTR.
Please note that if the **CH ADJ.** screw is used then you will have to retune your TV to the test signal as in item 2 to 4 above.

Auto Setup

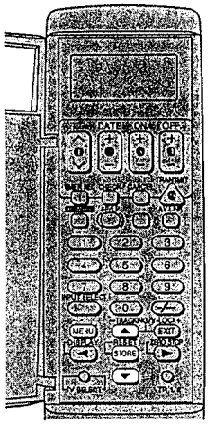
Auto Setup

When the VTR is turned on after connecting the aerial lead and the mains lead, Auto setup (Auto tuning and Auto clock setting) starts.

On Screen Display

- The Auto setup is searching for TV station from VHF minimum to UHF maximum and memorizing the data for every programme position. The other programme positions are skipped.
- The Auto setup takes five or more minutes to complete the search for TV station and the clock setting.

Notes:
- If VTR is not correctly set by Auto setup, see **Various settings** on pages 26–29.
- Auto clock setting will not work correctly if teletext information is not available. If the clock setting screen appears after auto tuning has been completed, set clock manually. See page 29.
- Clock information is subject to teletext information. If year information is not in teletext or time information in teletext is incorrect, set clock manually. See page 29.



Country-Selection

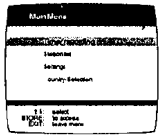
After the Auto setup is finished, select your country to set TV station list, guide number for ShowView and language.

Preparations

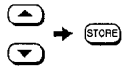
- Confirm that the TV is on and the VTR viewing channel is selected.
- Turn on the VTR.

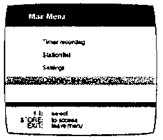
1 Press **MENU**.

MENU

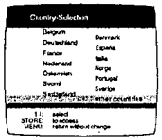


2 Select **Country-Selection**.





3 Select the desired country.
- Refer to page 33 as well.



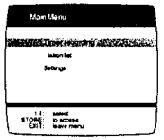
4 Press **STORE**, and then press **MENU**.

STORE → MENU

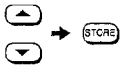
Viewing the TV station list

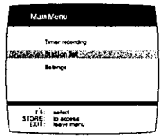
1 Press **MENU**.

MENU

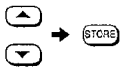


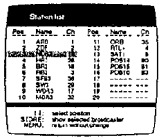
2 Select **Station list**.



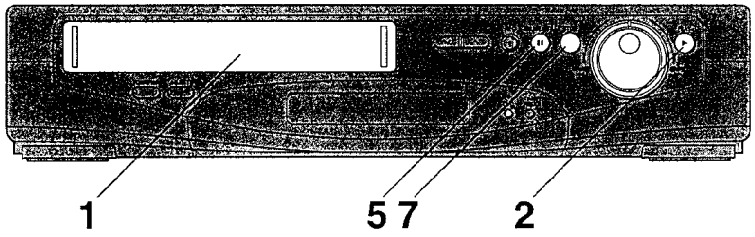


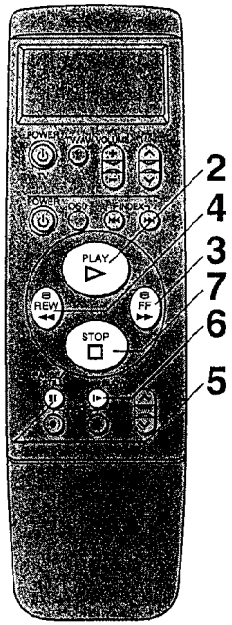
3 Select the desired TV station, if you want to view the broadcast.





Playback





Operations	Display Symbols	
1		Insert a recorded cassette tape.
2 PLAY		Start viewing the picture.
3 FF		Search forward by tapping **FF**. •To change back to normal playback, press **PLAY**.
4 REW		Search backward by tapping **REW**. •To change back to normal playback, press **PLAY**.
5 PAUSE/STILL		View a still picture. •To continue the normal playback, press **PLAY** or **PAUSE/STILL**.
6 SLOW		View the slow motion picture. •To continue the normal playback, press **PLAY**.
7 STOP		Stop viewing the picture.

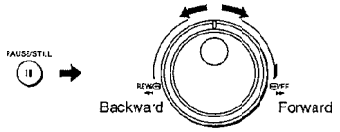
Other Playback Functions

To change the Playback Speed

Using Shuttle Ring:

1 Press **PAUSE/STILL** on the VTR.

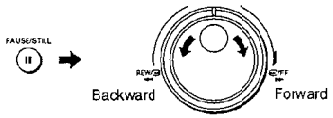
2 Rotate Shuttle Ring.



To locate the Desired Picture Exactly

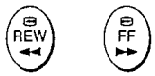
1 Press **PAUSE/STILL** on the VTR.

2 Turn Jog Dial.



To obtain High Speed Picture During Fast Forward or Rewind

Keep **FF** pressed during fast forward.
Keep **REW** pressed during rewind.



To playback the Recorded Part Repeatedly

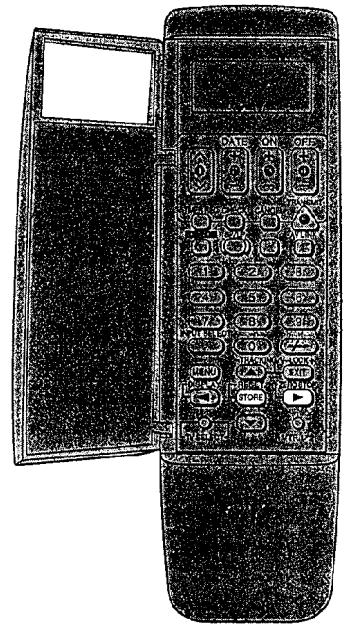
Keep **PLAY** pressed for more than 5 seconds.

•Press **STOP** to release from Repeat Playback mode.

To return to a Specified Scene

1 Press **RESET** to set the counter to 0:00.00.

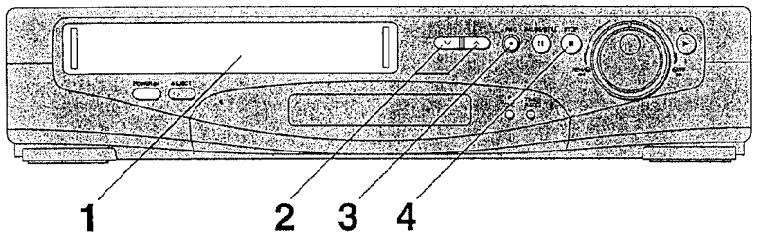
2 After playback, press **ZERO STOP** in the stop mode.
•The tape will be rewound or fast forwarded to 0:00.00 approximately.

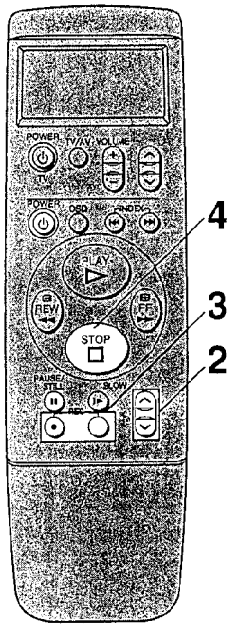


Notes:

- Cue, review or slow playback will be automatically released after 10 minutes, and still playback after 5 minutes.
- In LP mode only:
  1. During any playback mode other than normal playback, the picture may have some noise bars, the colour may be unstable, or a black and white picture may appear.
  2. When playing back a tape which was recorded on another VTR, it may be necessary to adjust the Tracking Control. In some cases the picture quality may still be inferior. This is due to limitation of format.

Manual Recording





Operations	Display Symbols	
1		Insert a cassette tape. •If it has already been inserted, press **POWER** to turn the VTR on.
2		Select TV station.
3		Start recording.
4		Stop recording.

To select the Desired Tape Speed

Press **SP/LP** before recording.

To interrupt Recording

Press **PAUSE/STILL** during recording.
Press again to continue recording.

To record One TV Programme while Viewing Another Programme

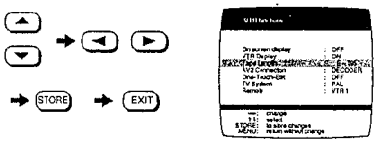
1 Refer to the manual recording operations steps 1 to 3.

2 Select the TV programme on your TV set you wish to view at the present time.

To display the Approximate Remaining Tape Time

1 Select **Tape Length** from On Screen Display and select the corresponding cassette tape length. See page 31.

On Screen Display



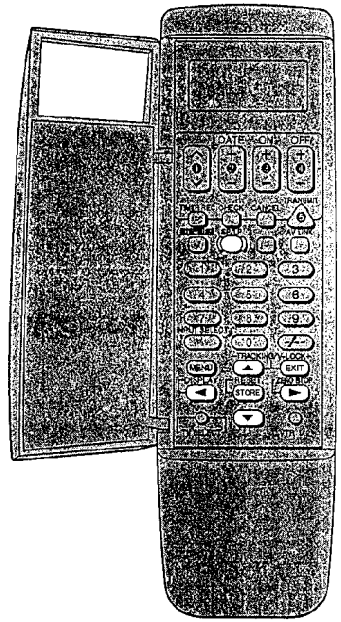
◄ E-180: For E30, -60, -90, -120 and -180 tapes.
E-195: For E195 tape.
E-240: For E240 tape.
E-260 ►: For E260 and -300 tapes.

2 Press **DISPLAY**.

→Clock→ Counter→ **Remaining Tape Time**→

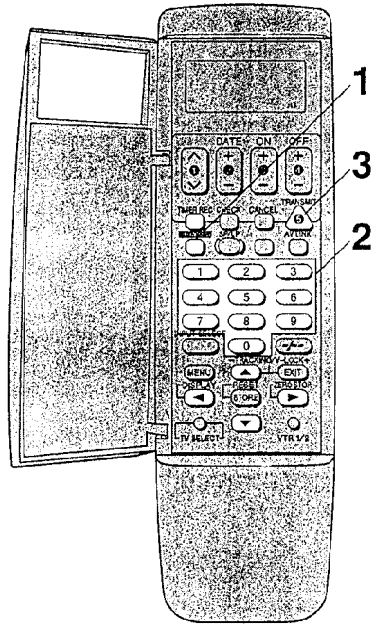
•The remaining tape time may not be displayed correctly depending on the tape used.

Notes:
•When a video cassette with a broken off tab is inserted, the "REC" indication will flash to indicate that recording is not possible.
•The recording pause mode will be automatically released after 5 minutes, and be back to the stop mode.



ShowView Programming

Programming is now easier than ever: simply enter the ShowView number provided in the programme schedule column carried by newspapers and magazines. ShowView numbers are numbers which are assigned to each programme listed in the TV programme schedule carried in newspapers and TV guides. When these numbers are entered and **TRANSMIT** is pressed, the numbers are converted into the actual programming.



Preparations

- Insert a cassette tape with an intact erasure prevention tab.
- Confirm that the TV is on and the VTR viewing channel is selected.

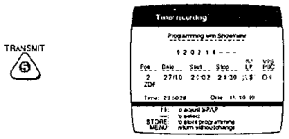
Operations **Display Symbols**

1 Press **SHOWVIEW**.

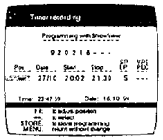
2 Enter a ShowView number.
Example: 920216

3 Press **TRANSMIT**.

On Screen Display



- The VTR will be in the timer recording standby mode after about 1 minute.
- If the "---" appears in the programme position:



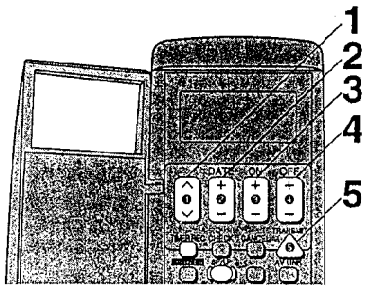
select the programme position of your VTR which receives the TV station you entered at step **2** using button ▲ or ▼.

- To extend the ending time or to make any corrections, use buttons ▲ ▼ ◄ ►.

Notes:

- To release from the standby mode, press TIMER REC.
- When the ShowView number is used for programming, the recording time may be slightly longer than the actual programme time.
- When programming two or more programmes, repeat steps **1**–**3**.
- The procedures for checking and cancelling a timer programme are the same as on page 19.

Using the Remote Controller



For Example:

Programme position (channel);	2
Date;	27th, October
Starting time;	20:02
Ending time;	21:30

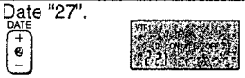
Preparation

- Insert a cassette tape with an intact erasure prevention tab.
- Open the door of the remote controller.

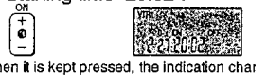
Operations **Display Symbols**

1 Set Programme position (channel) "2".

2 Set Date "27".



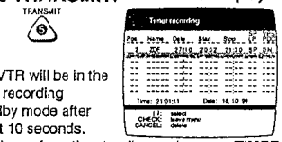
3 Set Starting time "20:02".



- When it is kept pressed, the indication changes in 30-minute steps.

4 Set Ending time "21:30".

5 Press **TRANSMIT**. On Screen Display



- The VTR will be in the timer recording standby mode after about 10 seconds.
- To release from the standby mode, press TIMER REC.

Weekly Timer Recording

In step **2**, select the desired day by pressing **DATE** –.
For example, SU (Sunday)

(SU=Sunday, MO=Monday, TU=Tuesday, WE=Wednesday, TH=Thursday, FR=Friday, SA=Saturday)

Daily Timer Recording

For this timer function, several groups of days can be selected.

Ⓐ Daily recording from Monday to Friday
Ⓑ Daily recording from Monday to Saturday
Ⓒ Daily recording from Sunday to Saturday

In step **2**, select the desired days by pressing **DATE** –.
For Example, Ⓒ

Timer Recording from External Signal Source

If Timer Recording is performed by a unit connected to the AV1 (TV), AV2 (DECODER/EXT) Sockets or AV3 (Audio/Video input sockets), select the A1, A2 or A3 indicator for the programme position.

A1: Through the AV1 (TV) socket.
A2: Through the AV2 (DECODER/EXT) socket.
A3: Through the AV3 (AUDIO IN/VIDEO IN) sockets on front panel.

Selecting the Desired Tape Speed

Press **SP/LP** in any of steps **2**–**4**.

Checking and Cancelling a Timer Programme

The procedures for checking and cancelling a timer programme are the same as on page 19.

Using On Screen Display

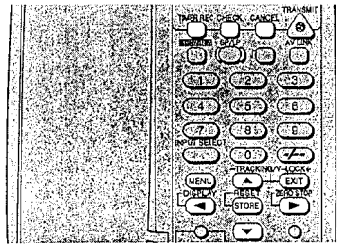
Up to 8 timer programmes can be recorded up to one month in advance by setting the timer, including weekly and daily programmes.

Preparations

- Insert a cassette tape with an intact erasure prevention tab.
- Confirm that the TV is on and the VTR viewing channel is selected.

For Example:

Programme position (channel);	2
Date;	27th, October
Starting time;	20:02
Ending time;	21:30
(Present date; 15th, October)	



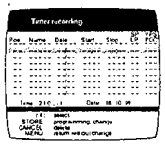
Follow the operation guide on screen display.

Operations

1 Press **MENU**, and then select **Timer recording**.

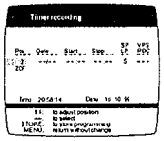
On Screen Display

2 Select the unoccupied position.

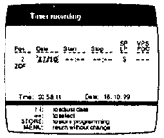


3 Set **Programme position** (channel) "2".

- Press ◀ to return to the previous item.

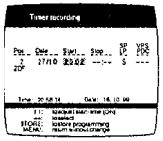


4 Set **Date** "27/10".

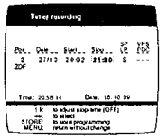


5 Set **Starting time** "20:02".

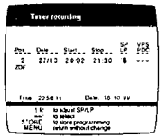
- When it is kept pressed, the indication changes in 30-minute steps.



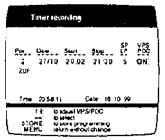
6 Set **Ending time** "21:30".



7 Select the desired **Tape speed** (SP/LP).



8 Select **VPS/PDC ON** or **OFF** (---).



9 Press **STORE**.

10 To activate timer recording, press **TIMER REC**.

Weekly Timer Recording

In step 4, select the desired day by pressing ▼.

Daily Timer Recording

For this timer function, several groups of days can be selected.

Ⓐ Daily recording from Monday to Friday

Ⓑ Daily recording from Monday to Saturday

Ⓒ Daily recording from Sunday to Saturday

In step 4, select the desired days by pressing ▼.

Timer Recording from External Signal Source

If Timer Recording is performed by a unit connected to the AV1 (TV), AV2 (DECODER/EXT) Socket or the Audio/Video input sockets, select the A1, A2 or A3 for the programme position.

A1: Through the AV1 (TV) socket.
A2: Through the AV2 (DECODER/EXT) socket.
A3: Through the AV3 (AUDIO IN/VIDEO IN) sockets on front panel.

Setting other Programmes in Succession

Repeat steps 2–9.

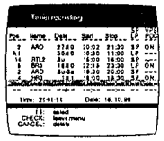
Checking a Timer Programme

- The VTR must be turned on, or the timer recording indicator "⏲" is lit.
- Confirm that the TV is on and the VTR viewing channel is selected.

Press **CHECK**.

CHECK

On Screen Display



- On Screen Display may be distorted in the PDC/VPS recording standby mode

Cancelling a Timer Programme

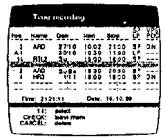
- The VTR must be turned on, or the timer recording indicator "⏲" is lit.
- Confirm that the TV is on and the VTR viewing channel is selected.

1 Press **CHECK**. CHECK

2 Select the desired timer programme.

3 Press **CANCEL**.

CANCEL



Note:

If a timer recording is not performed to the end (due to insufficient tape or cancellation by the user), the programmed timer recording data will be cancelled from the memory by 4 a.m. the next day.
However, if the Timer Record Function is activated at that time, the programmed timer recording data will be cancelled at 4 a.m. the next day.

PDC (Programme Delivery Control)/VPS (Video Programme System)

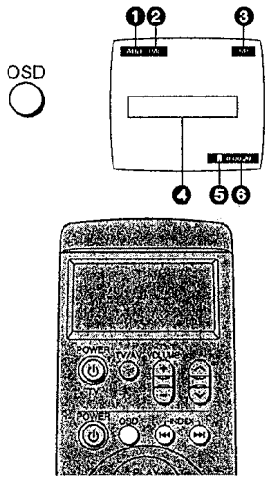
The Programme Delivery Control (PDC) or the Video Programme System (VPS) is a very convenient system which assures that the TV programmes you have programmed for timer recording will be recorded exactly from beginning to end, even if the actual broadcasting time differs from the scheduled time due to delayed start or extension of the programme duration. Also, if a programme is interrupted and, for example, some special news are inserted, the recording will also be interrupted automatically and resumed when the programme continues.

- In the case of PDC/VPS recording, use the correct time (PDC/VPS time) for recording the TV programmes. PDC/VPS recording is not performed when the time (PDC/VPS time) is incorrect, even if only by one minute.
- If the actual broadcasting times of timer recordings overlap (regardless of whether they are PDC/VPS controlled), the recording that starts first has always priority, and the recording of the later beginning programme will start only after the first timer recording has finished.
- When the PDC/VPS signal drops out because the broadcast signal is weak, or when a broadcasting station does not transmit a regular PDC/VPS signal, the timer recording will be performed in the normal mode (without PDC/VPS) even if it was programmed for PDC/VPS. In this case, even if the timer recording is performed, whatever has been programmed will not be cancelled at that particular time but at 4 a.m. on the following day.
- PDC/VPS recording is also possible during timer recording from AV2.

Other Functions

On Screen Display

Press **OSD** to make the On Screen Display appear on the TV screen.



1 TV station
2 TV system
3 Tape speed indicator
4 Error message
5 Tape running display

Stop, Eject	■
Rewind	◀◀
Fast Forward	▶▶
Playback	▶
Recording	●
Repeat Playback	R
Insert Editing	INSERT
AV Insert Editing	AV INSERT
Audio Dubbing	A DUB

6 Present time/Tape counter

Information	Display
Present time	17:24:31
Tape counter	−2:35.47
Remaining tape time	REMAIN 2:34

Notes:
- On Screen Display may be disturbed or disappear during special playback.
- When the item **"On screen display"** is set to OFF, the On Screen Display will not appear. (See page 30.)

VHS Index Search System

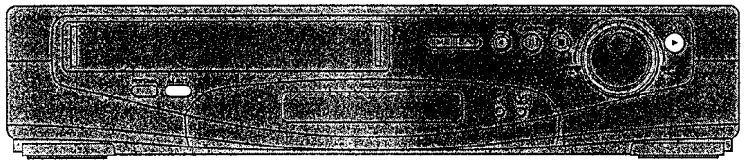
It is very easy to find the beginning of each recording, because a special index signal is recorded at the start of each recorded segment on the tape.

For example:
Searching for the 2nd recorded segment in the forward direction.

Press **INDEX** ▶▶| twice.

- After finding the specific recorded segment, playback starts automatically.
- For the reverse direction, press **INDEX** |◀◀.
- Up to 20 index signals can be searched for in both directions.
- When the opposite **INDEX** button is pressed, the number shall be decreased till 1.
- The figure on the display is decremented by 1 each time an index signal is located.
- The INDEX search function can only work correctly, if the index signals are spaced at least 3 minutes apart in the SP mode and 5 minutes apart in the LP mode.

Recording Index Signals
Index signals are recorded in following cases.
- When a recording is started by pressing **REC**.
- When **REC** is pressed during recording.
- When timer recording is activated.



NTSC Playback

Tapes recorded in the NTSC system can be played back with this VTR via a PAL system TV set.
- The playback picture may roll up or down. If the TV set is equipped with a V-HOLD control, it may be possible to stop the picture movement by adjusting this control.
- Depending on the TV set used, the picture may be in black and white. However, this is not an indication of a malfunction.

Other Automatic Functions

Automatic Playback
When a cassette without an erasure prevention tab is inserted, the VTR starts playback automatically.

VTR-off Playback
When the VTR is off, an inserted cassette can be played back by pressing **PLAY**.

Automatic Rewinding
When the tape reaches its end during recording (except for timer recording) or playback, it will automatically be rewound to the beginning.

Automatic Switching Off and Ejection
When the VTR is switched off, and inserted cassette can be ejected simply by pressing **EJECT**. The VTR will eject the cassette and automatically turn itself off again.

Editing

Assembly Editing

This function can be used to make up an edited tape from other recordings or video sources.

This enables you to record a new segment immediately after a previously recorded segment.

Preparations

- Connect a movie camera or another VTR to this VTR as shown.
- Insert a recorded cassette tape with an intact erasure prevention tab.
- Select the video source required by pressing **INPUT SELECT** to set A1, A2 or A3.
  - A1: Through the AV1 (TV) socket.
  - A2: Through the AV2 (DECODER/EXT) socket.
  - A3: Through the AV3 (AUDIO IN/VIDEO IN) sockets on front panel.

Operations

1 Press **PAUSE/STILL** on the recording VTR.

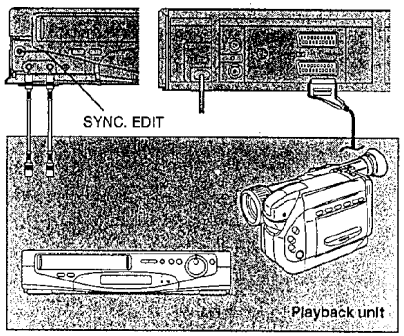
2 Search for the end of the previous recording.

3 Press **REC** to switch the VTR from the pause mode to the recording standby mode.

4 Start the new recording by pressing **PAUSE/STILL** again.

5 Press **STOP** to stop recording.

Recording VTR



Synchronized Editing

It is possible to synchronize the playback start and stop of the Movie Camera with the recording start and stop of this VTR.

Preparations

- Connect a Movie Camera to this VTR with Synchro Connection Cord (VW-K1E).
- Select **One-Touch-Edit** to **OFF** for synchronized editing. (See page 31.)

1 Put the VTR in the recording pause mode by pressing **REC** and **PAUSE/STILL**.

2 Put the Movie Camera in the still playback mode at the point where you want to start editing.

3 Press **PAUSE/STILL** on the VTR.
- The Movie Camera changes over to the playback mode and the dubbing will start automatically.

Synchronized Editing between the VTRs

When editing from another VTR equipped with Synchro Edit Socket, synchronized start and stop of both VTRs can be activated from this VTR.

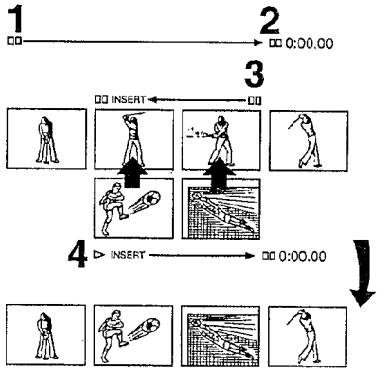
The operation is the same as described for synchronized editing from a Movie Camera.

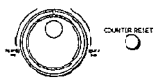
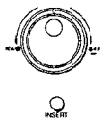
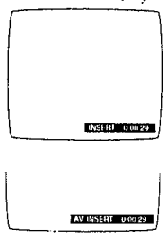
Insert Editing

This editing method allows a new recorded segment to be inserted into an existing recording to replace an existing segment of the same length.

Preparations

- Insert a recorded cassette with an intact erasure prevention tab.
- Select the video source required by pressing **INPUT SELECT** to set A1, A2 or A3.
  - A1: Through the AV1 (TV) socket.
  - A2: Through the AV2 (DECODER/EXT) socket.
  - A3: Through the AV3 (AUDIO IN/VIDEO IN) sockets on front panel.



Operations	Display Symbols	
1		Press **PAUSE/STILL** on recording the VTR.
2 		Search for the Edit out (ending) point, and set the counter to 0:00.00 by pressing **COUNTER RESET**.
3 	On Screen Display 	Search for the Edit in (starting) point, and press **INSERT**. • If you want to replace the sound too, press **AUDIO DUB** as well. (AV Insert Editing)
4		Start insert editing by pressing **PAUSE/STILL**. • The insert editing will finish when the counter reaches 0:00.00.

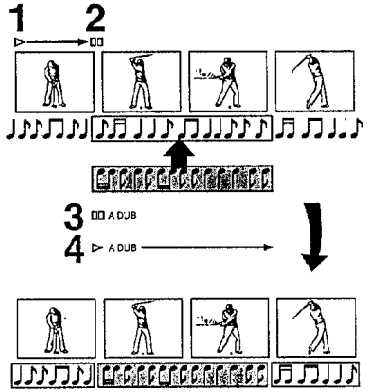
Note:
Insert Editing cannot be used on blank sections of a tape. In this case use Assembly Editing first.

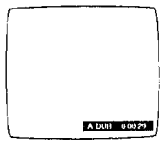
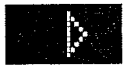
Audio Dubbing

This enables you to record new sound on a previously recorded tape.

Preparations

- Insert a recorded cassette with an intact erasure prevention tab.
- Select the video source required by pressing **INPUT SELECT** to set A1, A2 or A3.
  - A1: Through the AV1 (TV) socket.
  - A2: Through the AV2 (DECODER/EXT) socket.
  - A3: Through the AV3 (AUDIO IN) socket on front panel.



Operations	Display Symbols	
1 PLAY		Search for the starting point for audio dubbing.
2 PAUSE/STILL		Press **PAUSE/STILL** at the starting point.
3 AUDIO DUB	On Screen Display 	Set for audio dubbing by pressing **AUDIO DUB**. • On some televisions, the screen image may become unstable or begin to scroll at this point. However, this is not an indication of a malfunction.
4 PAUSE/STILL		Start recording the new sound by pressing **PAUSE/STILL**. • Stop recording by pressing STOP.

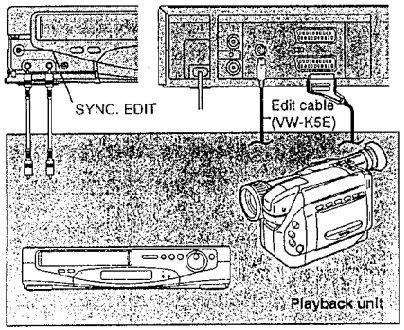
One-Touch-Editing

With this editing, it is easy to perform repeated assemble editing, insert edting or audio dubbing operations.

Preparations

- Before the VTR is connected to a movie camera or another VTR, select **One-Touch-Edit** to ON. (See page 31.)
  The playback VTR display or movie camera viewfinder image may be abnormal if the edit cable is connected with **One-Touch-Edit** left OFF.
- Connect a movie camera or another VTR to this VTR as shown.
- Use the **SYNC. EDIT** socket when connecting this unit to a VTR or movie camera equipped with a LANC socket.
- Insert a recorded cassette tape with an intact erasure prevention tab.
- Select the video source required by pressing **INPUT SELECT** to set A1, A2 or A3.
  - A1: Through the AV1 (TV) socket.
  - A2: Through the AV2 (DECODER/EXT) socket.
  - A3: Through the AV3 (AUDIO IN/VIDEO IN) sockets on front panel.

Recording VTR



Operations

1 Press **PAUSE/STILL** on the recording VTR.

PAUSE/STILL

2 Search for the end of the previous recording.

3 Press **REC** to switch the VTR from the pause mode to the recording standby mode.

REC

- The playback VTR will be in still mode.
- If **INSERT** or **AUDIO DUB** is pressed instead of **REC**, Insert Editing or Audio Dubbing can be performed.

4 Search for the Edit in (starting) point on the playback VTR.

5 Start One-Touch-Editing by pressing **PAUSE/STILL** again.

PAUSE/STILL

6 Press **PAUSE/STILL** at the Edit out (ending) point on the playback VTR.

PAUSE/STILL

- For Editing in succession, repeat **4** to **6**.

7 Press **STOP** to stop editing.

STOP

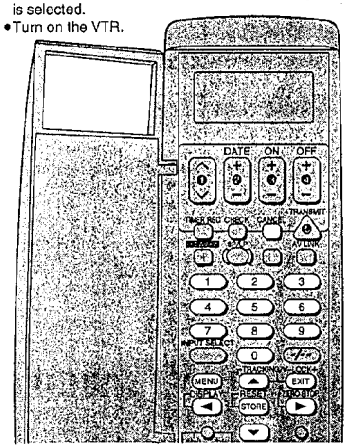
Storing TV Broadcasts into your VTR

Introduction

The VTR is fitted with its own tuner (just like a normal TV set) and can be pre-set to receive up to 99 TV broadcast stations.
If VTR is not correctly tuned by Auto setup, follow the procedure bellow.

Preparations

- Confirm that the TV is on and the VTR viewing channel is selected.
- Turn on the VTR.



Manual Tuning Procedure

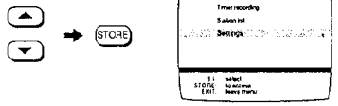
Follow the operation guide on screen display.

Operations

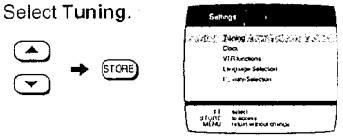
1 Press **MENU**.

2 Select **Settings**.

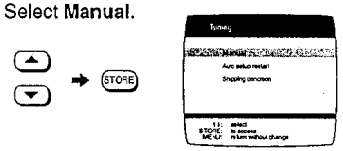
On Screen Display



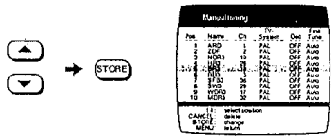
3 Select **Tuning**.



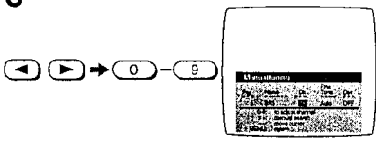
4 Select **Manual**.



5 Select desired programme position.



6 Select Channel **(Ch)**.



7 Select **Dec ON** or **Dec OFF**.
ON: To preset pay TV stations.
OFF: To preset normal TV stations.

8 Use ◄ ► to display the next screen.
Select **TV System**.
PAL: For receiving PAL signal.
MESECAM: For receiving SECAM signal.

9 Press **MENU**, and then press **EXIT**.

Channel Plan

Channel Indication	TV channel	
	Commercially	Other Countries
2–12	*E2–E12	E2–E12
13–20	A–H (Only Italy)	—
21–69	21–69	21–69
74–76	—	S1–S3
80–82	—	M1–M3
83–89	S4–S10	M4–M10
90–99	S11–S20	J1–U10
121–141 Hyperband	**S21–S41	S21–S41

*In Italy: H1...(11), H2...(12)
**Only for 8 MHz channel raster

To change the programme position or TV station name:

After step 5 but before step 8, select the programme position (Pos) or TV station name (Name) item using ◄ ►, and then make the desired change.

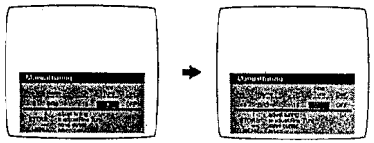
Fine Tuning Procedure

Follow steps **1** to **5** on page 26.

6 Select **Fine Tune**.

7 Press ▲ or ▼ to obtain the best tuning condition.
- To return the tuning to its former state, press **STORE**.

On Screen Display



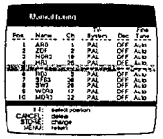
8 Press **MENU**, and then press **EXIT**.

Blanking of Unoccupied Programme positions

Follow steps **1** to **4** on page 26.

5 Select the desired TV station.

6 Press **CANCEL**.



- Repeat steps **5** and **6** for another unoccupied programme positions to skip during the selection of the programme positions.

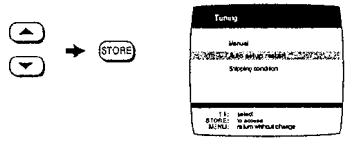
7 Press **EXIT**.

Auto Setup Restart

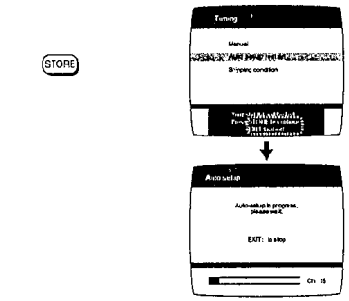
When your address changes, follow the procedure below.
Follow the steps 1 to 3 on page 26.

4 Select **Auto setup restart.**

On Screen Display



5 Press **STORE.**

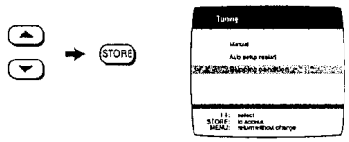


•After the Auto setup, select the your country to set TV station list, guide number for ShowView and language. See page 11.

Shipping Condition

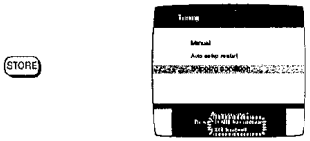
If you want to return the VTR to the factory-preset condition, follow the procedure bellow.
Follow the steps 1 to 3 on page 26.

4 Select **Shipping condition.**



5 Press **STORE.**

6 Press **STORE** again.



Note:
To re-tune VTR, disconnect mains lead and than reconnect mains lead. If VTR is off, turn on the VTR. Auto setup starts.

Setting the Clock of your VTR

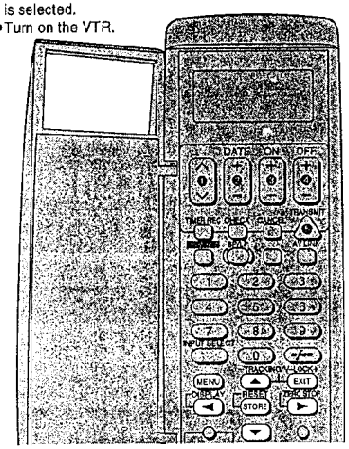
The built-in clock is used to activate the timer for automatic recording and must be set to the correct time.

The built-in digital clock employs the 24-hour system.

If VTR is not correctly set by Auto setup, follow the procedure below.

Preparations

- Confirm that the TV is on and the VTR viewing channel is selected.
- Turn on the VTR.



Manual Clock Setting

Follow the operation guide on screen display.

Operations

1 Press **MENU**, and then select **Settings.**

2 Select **Clock.**

3 Select **Manual setting.**

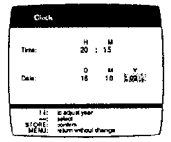
4 Set **Time (H/M)**
- When it is kept pressed, the indication changes in 30-minute steps.
- Press ◄ to return to the previous item.

5 Set **Date (D).**

6 Set **Month (M).**

7 Set **Year (Y).**
- There is no need to press ►.

On Screen Display



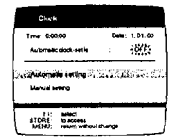
8 Press **STORE.**
- The clock will start.

9 Press **EXIT.**

Automatic Clock Setting

Follow steps 1 to 2 of the above procedure.

3 Select **Automatic setting.**



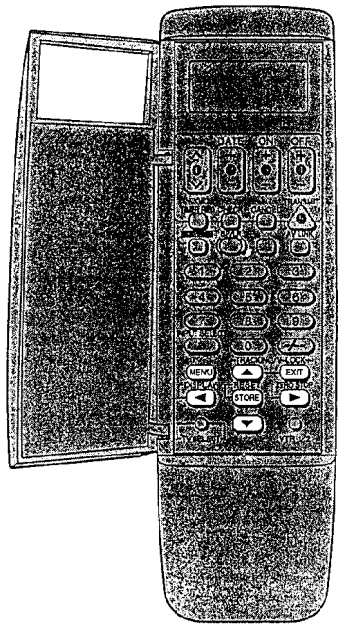
4 Press **STORE.**
- The clock is set automatically.

Notes:
- The clock operates for at least 60 minutes by its backup system in the event of power failure.
- When the item **"Automatic clock-set is"** is ON on screen display, Automatic time correcting function is activated.
  The Automatic time correcting function is only activated when the power is off. This function is not activated during timer recording standby mode.

Settings Using On Screen Display

Preparations

- Confirm that the TV is on and the VTR viewing channel is selected.
- Turn on the VTR.

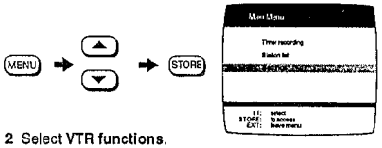


VTR functions

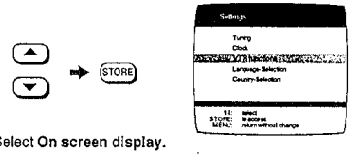
On Screen Display

1 Press **MENU**, and then select **Settings**.

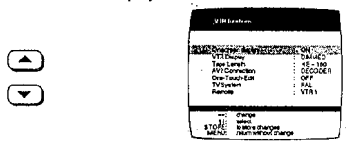
On Screen Display



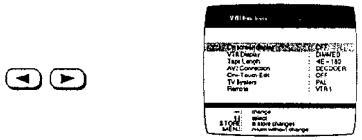
2 Select **VTR functions**.



3 Select **On screen display**.



4 Select **ON** or **OFF**.

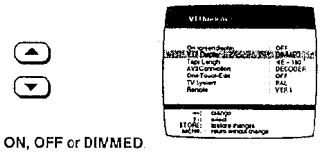


ON: The On Screen Display will appear on the TV screen by pressing **OSD**.
OFF: The On Screen Display will not appear even if **OSD** is pressed.

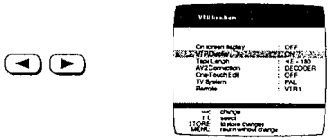
VTR Display

1 Select **VTR Display**.

On Screen Display



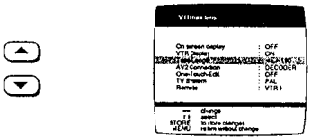
2 Select **ON, OFF** or **DIMMED**.



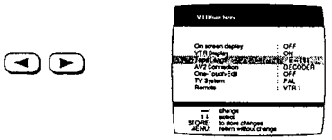
ON: When VTR is turned off, the characters are lit in the VTR display.
OFF: When VTR is turned off, the characters are not lit in the VTR display.
DIMMED: When VTR is turned off, the characters are dimmed in the VTR display.

To select the Corresponding Cassette Tape Length for Displaying the Approximate Remaining Tape Time

1 Select **Tape Length**.



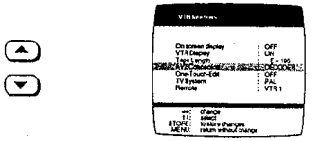
2 Select the corresponding cassette tape length.



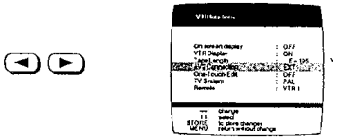
◀ E-180: For E30, -60, -90, -120 and -180 tapes.
E-195: For E195 tape.
E-240: For E240 tape.
E-260 ▶: For E260 and -300 tapes.
- The times displayed may differ depending on the tape used.

AV2 Connection

1 Select **AV2 Connection**.



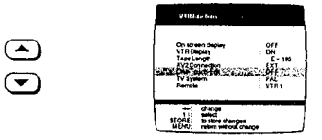
2 Select **EXT** or **DECODER**.



EXT: When another VTR is connected to the AV2 (DECODER/EXT) socket.
DECODER: When the decoder is connected to the AV2 (DECODER/EXT) socket.

One-Touch-Edit

1 Select **One-Touch-Edit**.



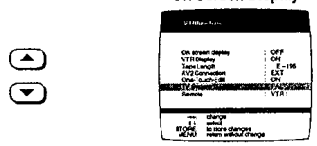
2 Select **ON** or **OFF**.

ON: For One-Touch-Editing.
OFF: For editing with editing controller or synchronized editing.

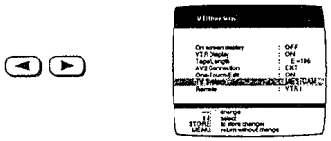
To set the Colour TV System

1 Select **TV System.**

On Screen Display



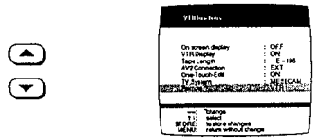
2 Select **PAL** or **MESECAM.**



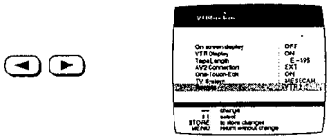
- Set according to the colour TV system used during playback or external recording.

Remote Control Mode

1 Select **Remote.**



2 Select **VTR1** or **VTR2.**



VTR1: Set to this position on both the VTR and remote controller for normal use with one VTR.

VTR2: Set to this position when using two Panasonic VTRs.
This allows to operate VTR1 or VTR2 with remote controller.

- After changing the remote control mode, press **VTR1/2** to change the remote control mode of the remote controller. If this is not done, it will not be possible to operate the VTR using the remote controller.

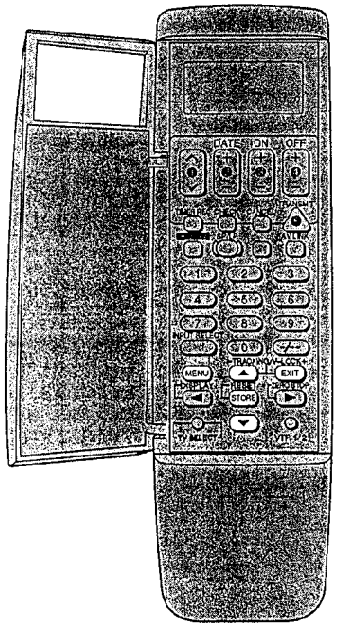
After All Settings are selected

Press **STORE**, and then press **EXIT** to make On Screen Display disappear.

STORE → EXIT

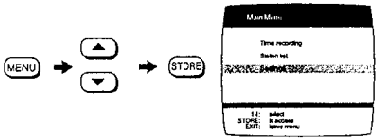
Language-Selection

To change the language setting for On Screen Display, follow the steps bellow.

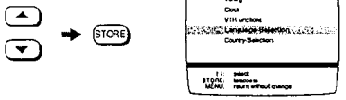


1 Press **MENU**, and then select **Settings.**

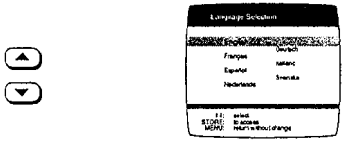
On Screen Display



2 Select **Language-Selection.**



3 Select the desired language.



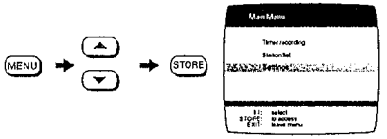
4 Press **STORE**, and then press **EXIT.**

STORE → EXIT

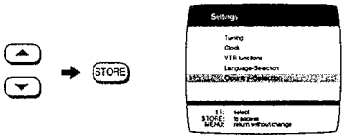
Country-Selection

To change the country setting, follow the steps bellow.

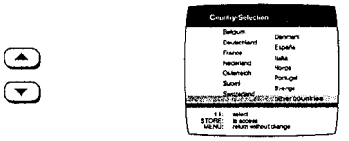
1 Press **MENU**, and then select **Settings.**



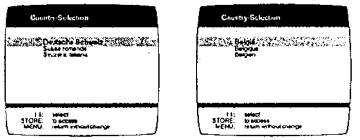
2 Select **Country-Selection.**



3 Select the desired country.



- When Switzerland or Belgium has been selected, operation moves to the screen which follows. Select the item in accordance with the language required.

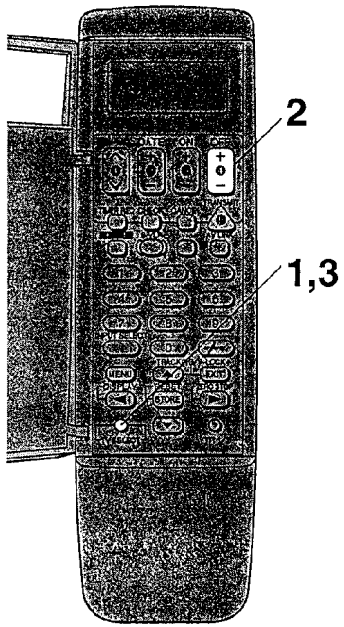


4 Press **STORE**, and then press **EXIT.**

STORE → EXIT

Setting the Remote Controller for Operation of your TV

You can operate some TV manufacturers (see next page) using the supplied Remote Controller after this setting up.



Preparation
Turn on the TV.

Operations	Display Symbols

1 Keep **TV SELECT** pressed for more than 2 seconds.

2 Press **OFF** several times.

- When the number matches the manufacturer of your TV, the TV's power is turned off.

Read through the information on the following page as well.

3 Press **TV SELECT**.

How to change the number
Each time the "+" side of **OFF** is pressed, the number is counted up by one as follows:
→1→2→3...28→

When the "–" side is pressed, the number is counted down by one in the reverse order to that indicated above.

Note:
Some TV models cannot be operated using this remote controller.

Number	Manufacturer
1–4	Panasonic
5	GRUNDIG, Blaupunkt, SIEMENS
6	PHILIPS, LOEWE, SAMSUNG, RADIOLA, DUAL, PYE, BUSH, GOODMANS, ELEMIS, CURTIS
7	SONY
8	METZ
9*	FERGUSON, THOMSON, TELEFUNKEN, GOODMANS, SABA
10*	FERGUSON, THOMSON, TELEFUNKEN, GOODMANS
11*	FERGUSON, THOMSON, TELEFUNKEN, GOODMANS, SABA
12*	FERGUSON, TELEFUNKEN, GOODMANS, SABA
13*	TELEFUNKEN
14*	FERGUSON, THOMSON, TELEFUNKEN, GOODMANS, SABA
15*	FERGUSON, THOMSON, TELEFUNKEN, GOODMANS, SABA, NORDMENDE, BRANDT
16*	TELEFUNKEN
17, 18	HITACHI
19	SIEMENS
20	SAMSUNG
21	ITT, NOKIA, SELECO
22	NOKIA, SALORA
23	MIVAR
24	TOSHIBA
25	SANYO
26	SHARP
27	JVC
28	MITSUBISHI

When a TV manufacturer has the plural number
For example, When the number is 1, 2, 3 or 4 (Panasonic):
When the TV's power is turned off in step 2 above, turn it back on and adjust the TV's volume using this remote controller. The volume can be adjusted if the number matches the TV manufacturer. If it is not possible to adjust the TV's volume, try setting the number (1 to 4) to match the TV manufacturer again until the volume can be adjusted.

***When the number is 9–16**
How to change the programme position of TV:

1 Press ∧ (TV) to make POS appear on screen display.

2 Press **VOLUME** + or –.
- To adjust the TV's volume using the remote controller after that, press ∧ (TV) to make POS on screen display disappear and then adjust the volume. For some models, POS disappears automatically after several seconds. In these cases, this operation is not necessary.

Note:
FERGUSON, THOMSON, TELEFUNKEN, GOODMANS and SABA have plural numbers. Although some models may operate with any of these numbers, other models may operate with only one number. Check each number in turn, and set the optimal number.

SECTION 2
ADJUSTMENT PROCEDURES

2-1. DISASSEMBLY METHOD

2-1-1. DISASSEMBLY FLOW CHART

This flow chart indicates disassembly steps of the cabinet parts and the circuit boards in order to find the necessary items for servicing.
When reassembling, perform the steps in the reverse order.

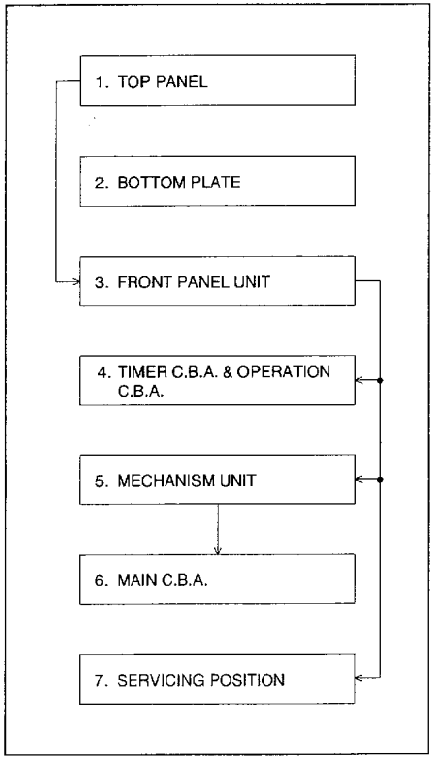


Fig. D1

2-1-2. DETAIL OF DISASSEMBLY METHOD

1. REMOVAL OF THE TOP PANEL

Remove..... 4 Screws (A)

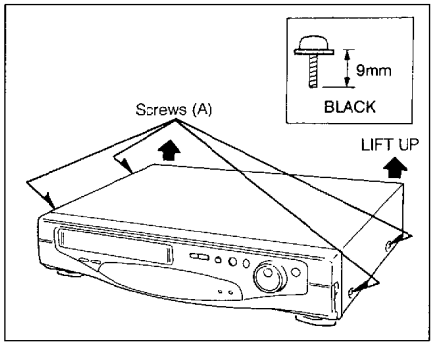


Fig. D2

2. REMOVAL OF THE BOTTOM PLATE

Remove..... Screw (B)
Remove..... 2 Screws (C)
Unlock ..... 4 tabs (D)

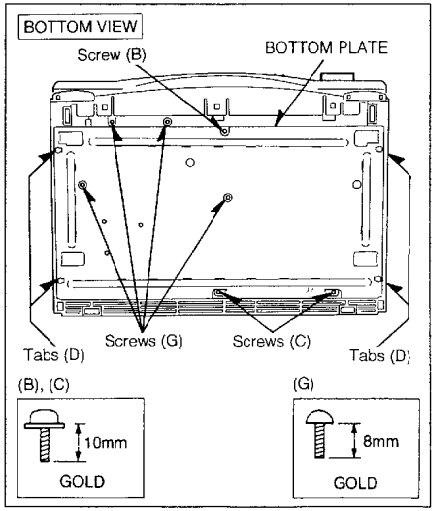


Fig. D3

3. REMOVAL OF THE FRONT PANEL UNIT

Pull out ..... JOG & SHUTTLE Krob
Remove..... Screw (D)
Unlock ..... 8 Tabs (E)

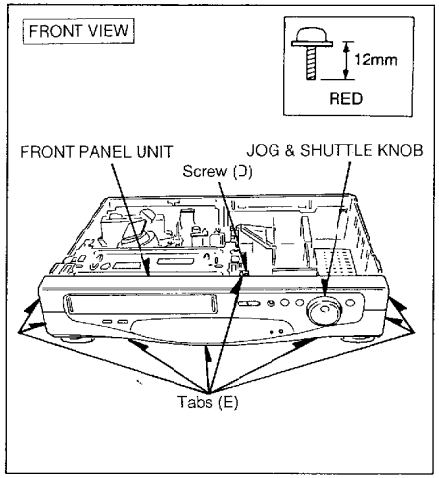


Fig. D4

4. REMOVAL OF THE TIMER C.B.A. & OPERATION C.B.A.

Unlock ..... 6 Tabs (F)

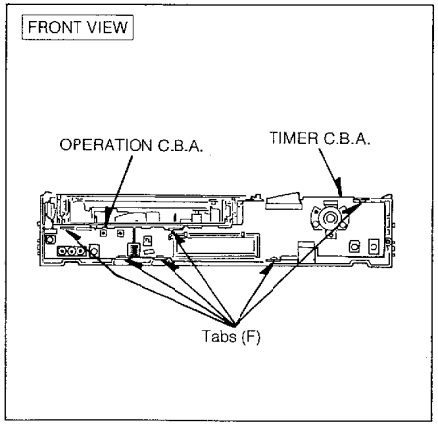


Fig. D5

5. REMOVAL OF THE MECHANISM UNIT

Remove..... 4 Screws (G) [Fig. D3]
Remove..... 3 Screws (H)
Remove..... Screw (I)
Unlock ..... Tab (J) and PACK HOLDER

6. REMOVAL OF THE MAIN C.B.A.

Remove..... 2 Screws (C) [Fig. D3]
Unlock ..... 7 Tabs (K)

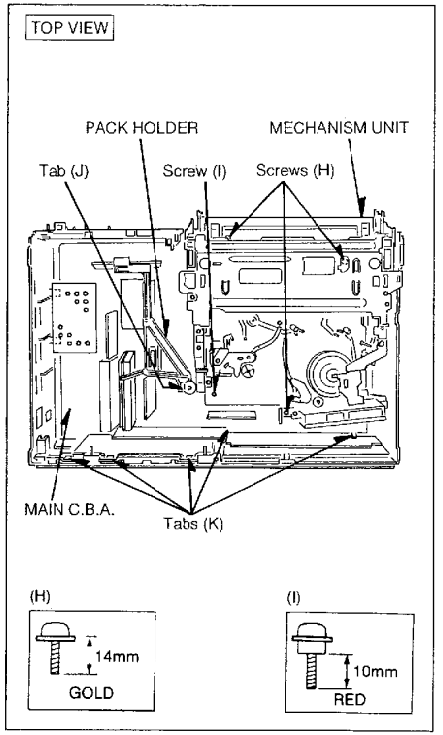


Fig. D6

7. SERVICING POSITION

Remove ..... 2 Screws (C) [Fig. D3]
Remove ..... 3 Screws (H)
Remove ..... Screw (I)
Unlock ..... Tab (J) and PACK HOLDER
Unlock ..... 7 Tabs (K)

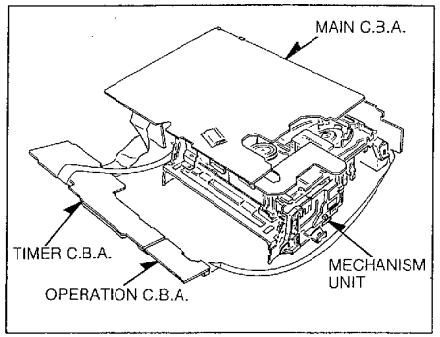


Fig. D7

2-2. MECHANICAL ADJUSTMENT PROCEDURES

The mechanical chassis of this mode is the K Mechanical Chassis.
Therefore refer to the Service Manual for K Mechanical Chassis. (Order No. VRD9307M131)

CAUTIONS:

To make a Adjustment Mode for Tape Interchangeability, there are two ways to turn off the Auto Tracking.

(1) Connect a jumper wire (K2501) which has been cut as shown in Fig. M1.
After finishing the adjustment, disconnect the jumper wire.
(2) Press the "FF", "REW" and "EJECT" buttons 3 times to set the Service Mode 2.

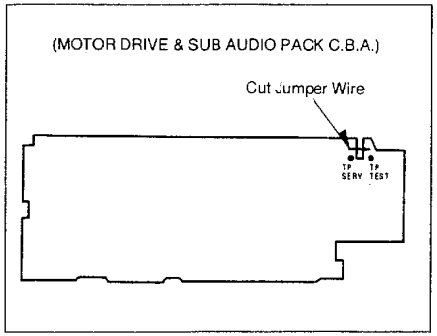


Fig. M1

2-3. DISASSEMBLY PROCEDURES OF MECHANISM

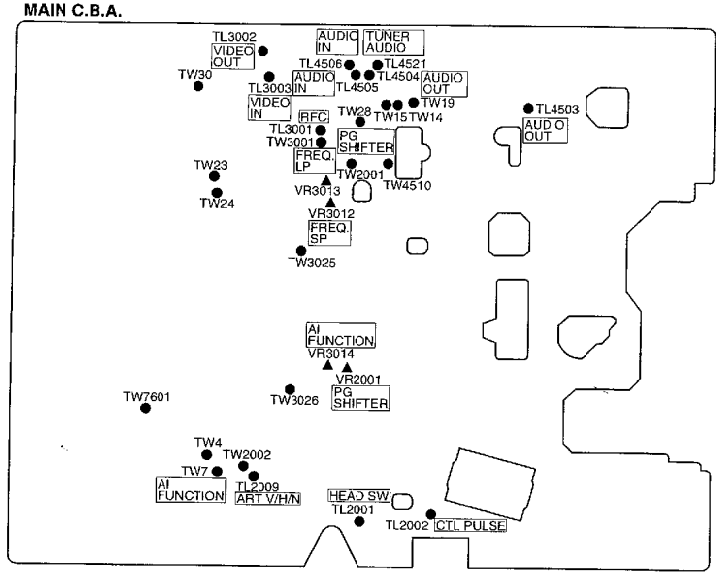
The mechanical chassis of this model is the K Mechanical Chassis.
Therefore refer to the Service Manual for K Mechanical Chassis. (Order No. VRD9307M131)

2-4. ASSEMBLY PROCEDURES OF MECHANISM

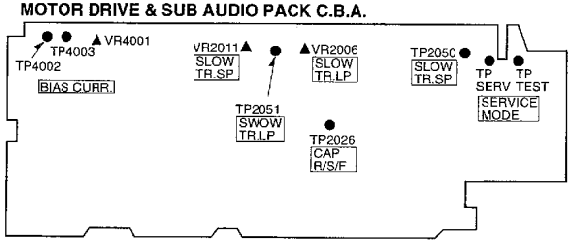
The mechanical chassis of this model is the K Mechanical Chassis.
Therefcre refer to the Service Manual for K Mechanical Chassis. (Order No. VRD9307M131)

LOCATION OF TEST POINTS & CONTROLS

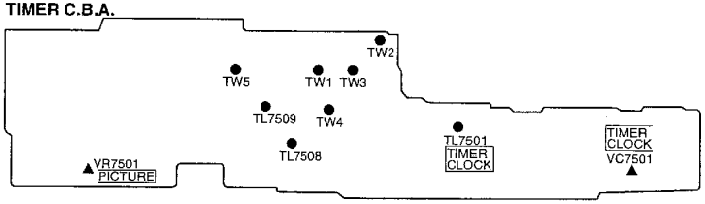
MAIN C.B.A.



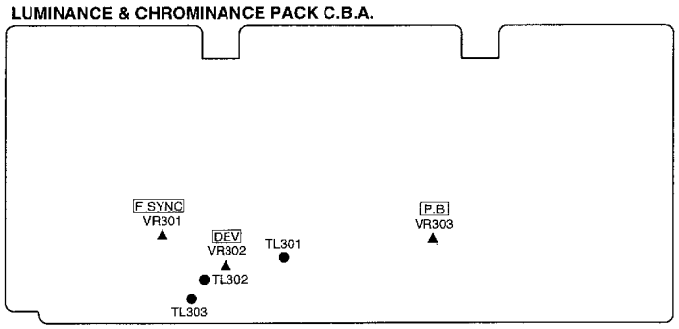
MOTOR DRIVE & SUB AUDIO PACK C.B.A.



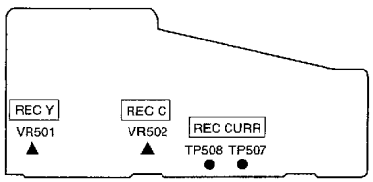
TIMER C.B.A.



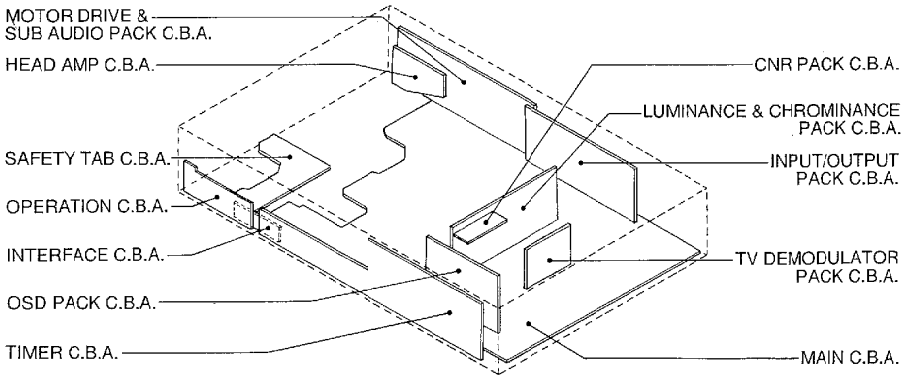
LUMINANCE & CHROMINANCE PACK C.B.A.



HEAD AMP C.B.A



CIRCUIT BOARD LAYOUT



2-5. ELECTRICAL ADJUSTMENT PROCEDURES

Ths section provides complete adjustment procedures required fcr elactric circuits of VHS Video Cassette Recorders.

2-5-1. TEST EQJIPMEN¯
To perform electrical adjustments following equipment is required.

1. Dual-Trace Oscilloscope. (More than 35MHz)
   Voltage Range: 0.005-5V/div
   Frequency Range: DC-35MHz
   Probes: 10:1 OR 1:1
2. Frequency Counter.
   Frequency Range: 0-10MHz
   Probes: 1:1
3. Universal Counter.
4. Digital Volt Meter. (D.V.M.)
5. Video Sweep Generator.
6. Sine Wave Generator.
7. Video Pattern Genera:or.
8. VHS Alignment Tape. (VFJ8125H3F)
9. VHS Blank Tape.
10. Monitor.
11. Plastic Tip Driver.
12. DC Power Supply.

2-5-2. PREPARATION
During adjustment, set each selector as follows: when no indication in the procedure.

CVC SW .....ON
TAPE SPEED .....SP
CHANNEL.....AV1/AV2/AV3
(Set to signal input terminal number)
TEST SIGNAL SW (REAR) .....OFF
PICTURE VR .....CENTRE FIX

2-5-3. HOW ¯O READ ADJUSTMENT PROCEDURES

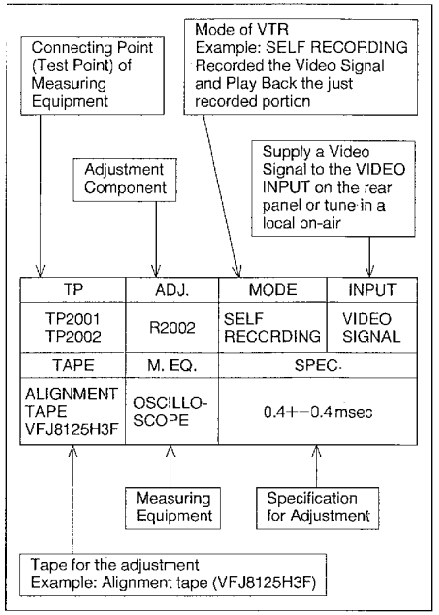


Fig. E1

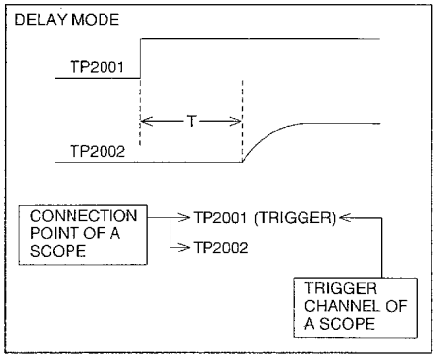


Fig. E2

SERVO SECTION

2-5-4. PG SHIFTER ADJUSTMENT

TP	ADJ.	MODE	INPUT
TW2001 VIDEO OUT	VR2001	PLAYBACK	
TAPE	M. EQ.	SPEC.	
ALIGNMENT TAPE VFJ8125H3F	OSCILLO-SCOPE	7.0+−0.5 (H)	

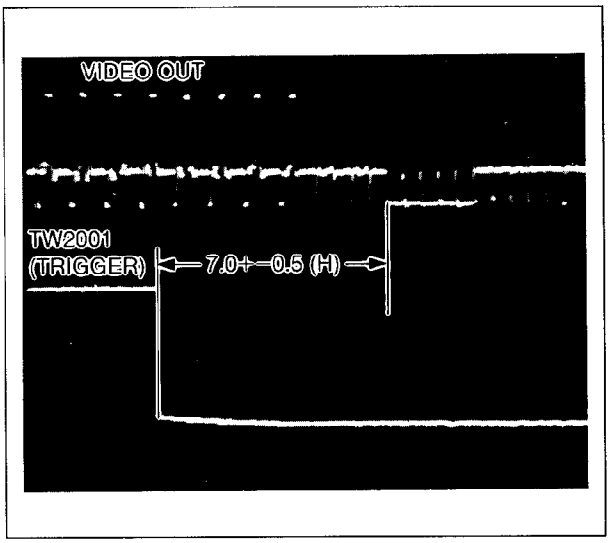


Fig. E3

2-5-5. SLOW TRACKING ADJUSTMENT

TP	ADJ.	MODE	INPUT
MONITOR SCREEN	VR2011 (SP) VR2006 (LP)	(SELF RECORD) SLOW	CCIR PATTERN
TAPE	M. EQ.	SPEC.	
BLANK TAPE	MONITOR TV	Noise bar on the monitor screen is minimized. (Shown in Fig. E5)	

Note: 1. Before this adjustment, connect a jumper wire which has been cut as shown in Fig. E4 or set the service mode 2 (refer to section 2-2).
2. After connecting a jumper wire or setting the service mode 2, press the TRACKING (+) and (−) buttons on the Remote Controller simultaneously to set the tracking to centre fix position.
3. After this adjustment, disconnect a jumper wire or cancel the service mode.

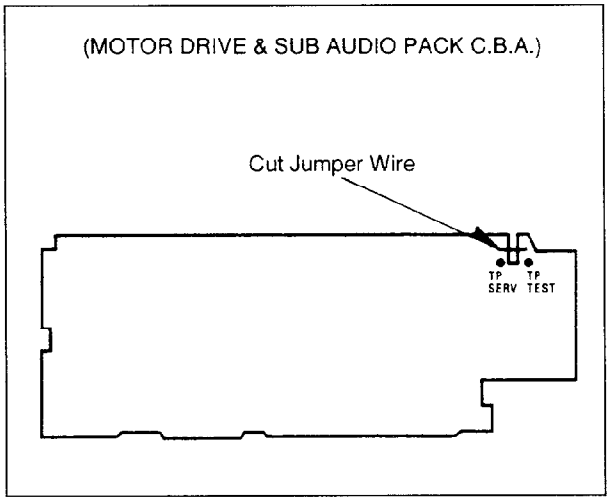


Fig. E4

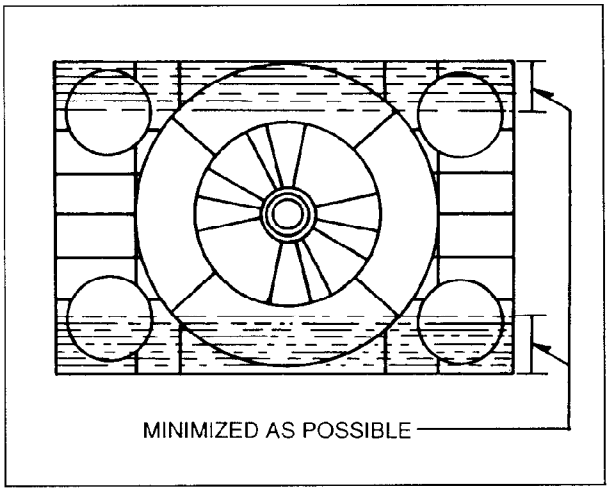


Fig. E5

LUMINANCE & CHROMINANCE SECTION

2-5-6. RECORDING CURRENT ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP507 (HOT) TP508 (GND)	VR501 (Y) VR502 (C)	SP RECORDING	PAL COLOUR BAR
TAPE	M. EQ.	SPEC.	
BLANK TAPE	OSCILLO-SCOPE	Y=130+−5 (mVp-p) C=32+−2 (mVp-p)	

Note: 1. Adjust the Luminance level until the peak level of V-SYNC is 130+−5mVp-p.
2. When adjusting the Chrominance level, Supply +5V DC to Pin 6 of PP3001 to eliminate Luminance component.

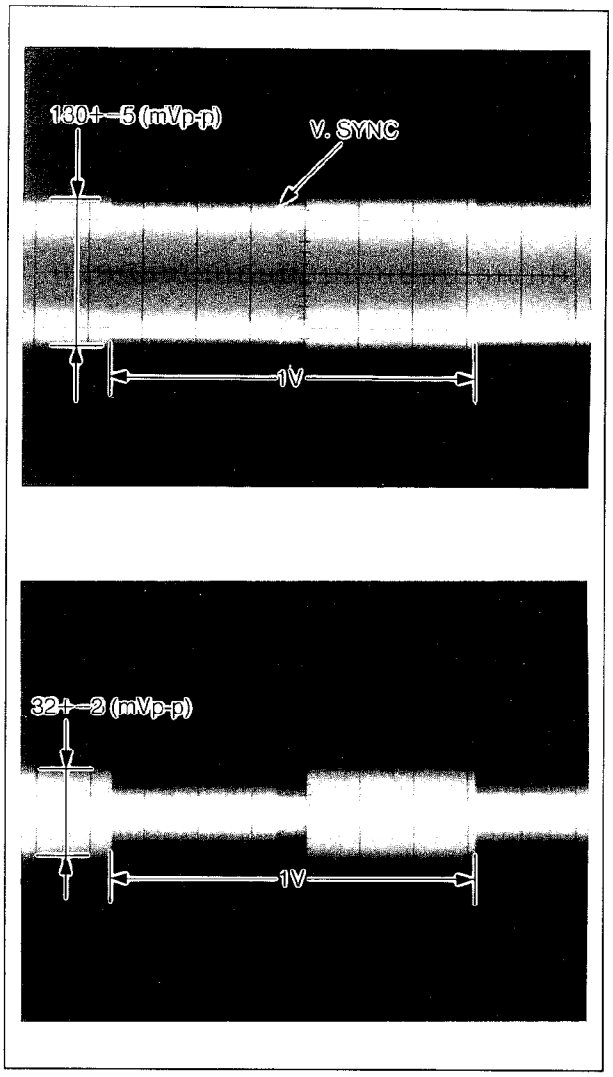
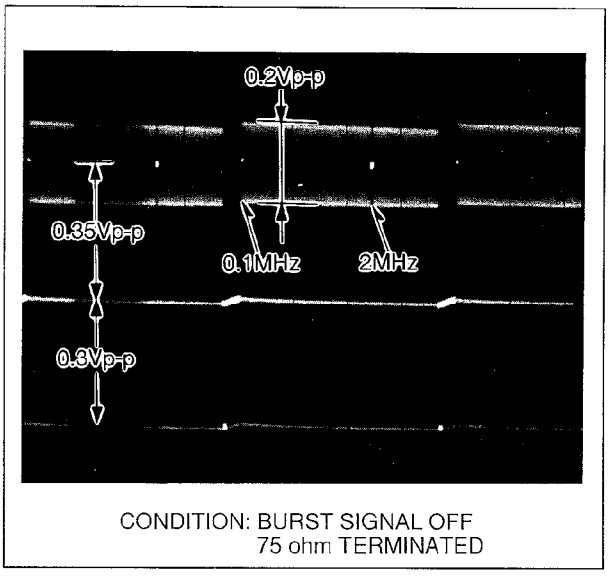


Fig. E6

2-5-7. VIDEO FREQUENCY RESPONSE ADJUSTMENT

TP	ADJ.	MODE	INPUT
VIDEO OUT	VR3012 (SP) VR3013 (LP)	SP/LP (SELF RECORD) PLAYBACK	VIDEO SWEEP SIGNAL (Shown in Fig. E7)
TAPE	M. EQ.	SPEC.	
BLANK TAPE	OSCILLO-SCOPE/ VIDEO SWEEP GENERATOR	SP: 0+−1 (dB) (90−110%) LP: 0+−1 (dB) (90−110%)	

Note: 1. Set the Video Sweep Signal as shown in Fig. E7.
2. Set the CVC SW to OFF position.



CONDITION: BURST SIGNAL OFF
75 ohm TERMINATED

Fig. E7

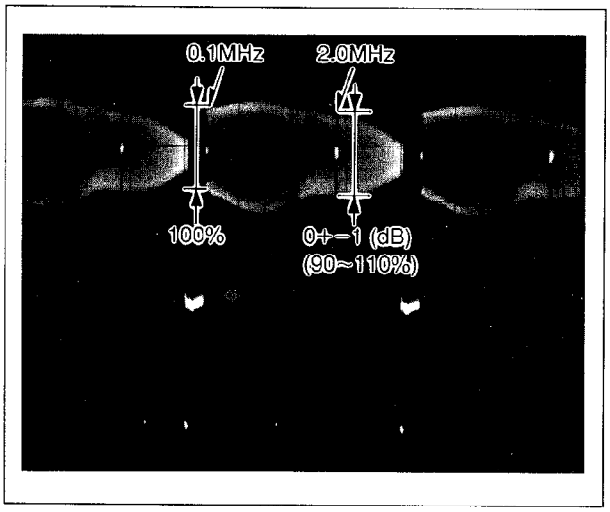


Fig. E8

2-5 8. PLAYBACK LEVEL ADJUSTMENT

TP	ADJ.	MODE	INPUT
VIDEO OUT	VR303	PLAYBACK	
TAPE	M. EQ.	SPEC.	
ALIGNMENT TAPE VFJ8125H3F	OSCILLO-SCOPE	Y: 2.0+−0.1 Vp-p CYAN: 1.1+−0.3 Vp-p	

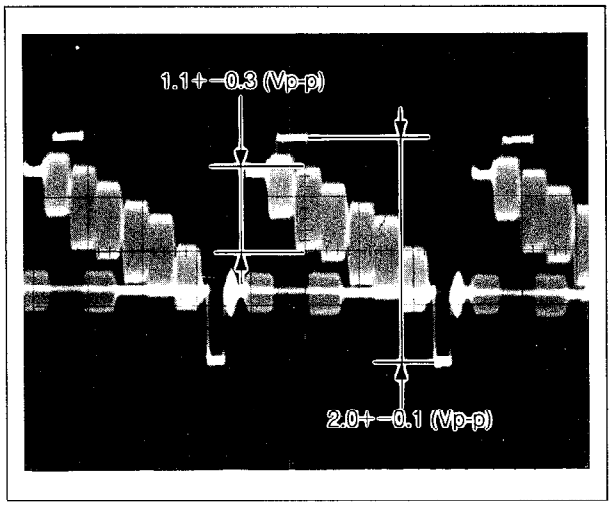


Fig. E9

2-5-9. DEVIATION ADJUSTMENT

TP	ADJ.	MODE	INPUT
VIDEO OUT	VR301 VR302	(SELF RECORDED) PLAYBACK	PAL COLOUR BAR
TAPE	M. EQ.	SPEC.	
BLANK TAPE	OSCILLO-SCOPE	Y: 2.0+−0.1 (Vp-p) (VIDEO: SYNC=70 : 30)	

Note: 1. Before this adjustment, the PLAYBACK LEVEL ADJUSTMENT (2-5-8) must be done.
2. Record the colour bar signal and adjust VR301 and VR302 during recording.
3. Playback the just recorded portion and confirm the playback Y-signal level is 2.0+−0.1 Vp-p.
4. If the signal level is out of the specification, repeat 2 and 3 until the signal level is the specification.

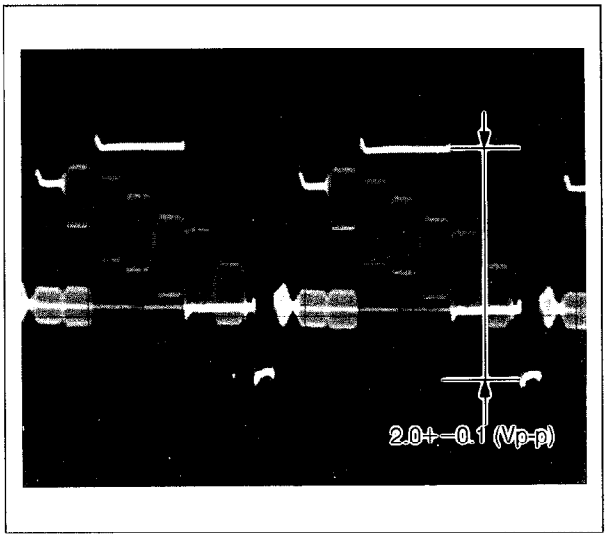


Fig. E10

2-5-10. AI FUNCTION ADJUSTMENT

TP	ADJ.	MODE	INPUT
TW7	VR3014	PLAYBACK (SELF RECORDED)	PAL COLOUR BAR
TAPE	M. EQ.	SPEC.	
BLANK TAPE	D.V.M	2.5+−0.3 (V)	

AUDIO SECTION

2-5-11. BIAS CURRENT ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP4002 (HOT) TP4003 (GND)	VR4001	RECORDING	
TAPE	M. EQ.	SPEC.	
BLANK TAPE	D.V.M.	2.6+−0.1 (mVrms)	

Note: 1. Connect the Audio Input and GND.

TIMER SECTION

2-5-12. TIMER REFERENCE CLOCK ADJUSTMENT

TP	ADJ.	MODE	INPUT
TL7501	VC7501	STOP	
TAPE	M. EQ.	SPEC.	
	UNIVERSAL COUNTER	7812.5+−0.015 (usec)	

Memo

SECTION 3
ABBREVIATIONS & BLOCK DIAGRAMS

3-1. ABBREVIATIONS

443NT [L]	4.43 NTSC Ⓛ	BIL. [H]	BILINGUAL Ⓗ
A. COMP	AUDIO COMPONENT SIGNAL	BIL/M1 [L]	BILINGUAL Ⓛ
A. COMPO	AUDIO COMPONENT SIGNAL	BS CLOCK	BS CLOCK
A. D.P [L]	AUDIO DUBBING PAUSE Ⓛ	BS DATA	BS DATA
A. D/L [L]	AUDIO DUBBING PAUSE Ⓛ	BS LCH IN	BS L CHANNEL INPUT
A. DEF [S]	AUDIO DEFEAT	BS MIX [H]	BS MIX Ⓗ
A. DEF [S] [L]	AUDIO DEFEAT	BS MON [H]	BS MONITOR Ⓗ
A. DUB P [L]	AUDIO DUBBING PAUSE Ⓛ	BS MONI [H]	BS MONITOR Ⓗ
A. DUB [H]	AUDIO DUBBING Ⓗ	BS RCH IN	BS R CHANNEL INPUT
A. ERASE	AUDIO ERASE	BS VIDEO	BS VIDEO SIGNAL
A. H. SW	AUDIO HEAD SWITCHING PULSE	BS VIDEO/BS1	BS VIDEO SIGNAL
A. HEAD [R]	AUDIO HEAD (REC)	BS [H]	BS Ⓗ
A. HEAD [W]	AUDIO HEAD (PLAY)	BS. LEVEL	BS LEVEL
A. IN [L]	AUDIO INPUT (L)	BS. M [H]	BS MONITOR Ⓗ
A. IN [R]	AUDIO INPUT (R)	BS/VTR [H]	BS/VTR Ⓗ
A. MUT [H]	AUDIO MUTE Ⓗ	BUS CLK	BUS CLOCK
A. MUTE [H]	AUDIO MUTE Ⓗ	BUS LSN	BUS LISTEN
A. OUT [L]	AUDIO OUTPUT (L)	BUS TLK	BUS TALK
A. OUT [R]	AUDIO OUTPUT (R)	BUZZER	BUZZER
A. RF OUT	AUDIO RF SIGNAL OUTPUT	CAP EC	CAPSTAN TORQUE CONTROL
A/VS/S. DATA	AV SW/SERIAL DATA	CAP M GND	CAPSTAN MOTOR GND
AC ONLINE	AC ONLINE	CAP. ET	CAPSTAN TORQUE CONTROL
AC. O/EE. H	AC ONLINE/EE Ⓗ	CAP. FG1	CAPSTAN FG1 PULSE
AFC S C	AFC S CURVE	CAP. FG2	CAPSTAN FG2 PULSE
AFC [S]	AFC S CURVE	CAS. SW	CASSETTE SW
AFC. DEF	AFC DEFEAT	CCN	PLAYBACK CONTROL SIGNAL (−)
ARFC OUT	AUDIO RF SIGNAL OUTPUT	CCP	PLAYBACK CONTROL SIGNAL (+)
ART. V	ARTIFICIAL VERTICAL SYNC SIGNAL	CHM	CONTROL SIGNAL (+)
ART. V. MM	ARTIFICIAL VERTICAL SYNC SIGNAL MONO MULTI	CHP	CONTROL SIGNAL (−)
		CINEM [L]	CINEMA Ⓛ
ART. V/H/N	ARTIFICIAL VERTICAL SYNC SIGNAL Ⓗ/NORMAL	CINEMA [L]	CINEMA Ⓛ
		CINEMA/MIX	CINEMA/MIX
AT. V/H/N	ARTIFICIAL VERTICAL SYNC SIGNAL	CKL	RATCH LOCK
ATSW/TEST/NOR/SE	TEST/NORMAL/SERVICE	CKS	SHIFT LOCK
AUDIO IN [L]	AUDIO INPUT (L)	CL	CLOCK
AUDIO IN [R]	AUDIO INPUT (R)	CLK	CLOCK
AUDIO OUT [L]	AUDIO OUTPUT (L)	CLK (C.G)	CLOCK
AUDIO OUT [R]	AUDIO OUTPUT (R)	CLOCK. IN	CLOCK INPUT
AUDIO SELECT [H]	AUDIO SELECT Ⓗ	CLP	CLAMP
AUDIO. L	AUDIO (L)	COL/B/W/NOR	COLOUR/BLACK & WHITE/NORMAL
AUDIO. R	AUDIO (R)	COLOR [H]	COLOUR Ⓗ
AV CNT	AV CONTROL	CONV	CONVERTOR
AV CTL	AV CONTROL	CS	CHIP SELECT
AV CTL/S. CLK	AV CONTROL/SERIAL CLOCK	CTL GND	CONTROL GND
AV. C.M.	AV CONTROL MODE	CTL HEAD [+]	CONTROL HEAD (+)
AVCNT/METER. R	AV CONTROL/LEVEL METER (R)	CTL HEAD [−]	CONTROL HEAD (−)
AVSW/METER. L	AV SW/LEVEL METER (L)	CTL [+]	CONTROL HEAD (+)
B MODE. H	B MODE Ⓗ	CTL [−]	CONTROL HEAD (−)
B.G.P	BURST GATE PULSE	CUE BIAS	CUE BIAS
BACKUP 5V	BACK UP 5V	CURRENT LIM	CURRENT LIMMITER
BAND. U.E.	BAND U	CYL ET	CYLINDER TORQUE CONTROL
BANDVL. D	BAND VL	CYL GND	CYLINDER GND
BI/MI [L]	BILINGUAL/MIX Ⓛ	D.F.M. REC [H]	DELAIED FM RECORDING Ⓗ
BIL	BILINGUAL	D. FM REC [L]	DELAIED FM RECORDING Ⓛ
BIL [L]	BILINGUAL Ⓛ	D. GND	DIGITAL GND

ABBREVIATIONS

D. REC [H]	DELAYED RECORDING Ⓗ	H. SYNC	HORIZONTAL SYNC
D4/S. LED	D4/STILL LED	H. AMP. SW	HEAD AMP SW PULSE
D4/STILLED	D4/STILL LED	H. P <R>	HEAD PHONE (R)
DAC [CLK]	TUNER DAC (CLOCK)	H. P <L>	HEAD PHONE (L)
DAC/FSCS	TUNER DAC/FS CHIP SELECT	H. P GND	HEAD PHONE GND
DAREC [H]	DELAYED AUDIO RECORDING Ⓗ	H. P OUT [L]	HEAD PHONE OUTPUT (L)
DATA	DATA	H. P OUT [R]	HEAD PHONE OUTPUT (R)
DECODER [L]	DECODER (L)	H. SW	HEAD SW PULSE
DECODER [R]	DECODER (R)	HEAD PHONE [L]	HEAD PHONE (L)
DEW	DEW	HEAD PHONE [R]	HEAD PHONE (R)
DEW SNS	DEW SENSOR	HEAD SW	HEAD SW
DFMRE [H]	DELAYED FM AUDIO RECORDING Ⓗ	HEATER [+]	HEATER (+)
E. REC 5V	EXCEPT RECORDING 5V	HEATER [−]	HEATER (−)
EC	ERR0R TORQUE CONTROL	HSS	HORIZONTAL SYNC SIGNAL
ECR	ERROR TORQUE CONTROL	HTR [+]	HEATER (+)
	REFERENCE VOLTAGE	HTR [−]	HEATER (−)
EDT TRIG [L]	EDIT TRIGGER Ⓛ	I RFE	REFERENCE CURRENT
EDIT [H]	EDIT Ⓘ	ICL	CONTROL AGC CIRCUIT
EE [H]	EE Ⓗ	IF	INTERMEDIATE FREQUENCY
EE [H]/INS [M]	EE Ⓗ/INSERT Ⓜ	IN SELA1	INPUT SELECT A1 POSITION
EE. VV. TR	EE/VV/TRICK PLAY	IN SELA2	INPUT SELECT A2 POSITION
EJECT. PO	EJECT POSITION	IN SELA3	INPUT SELECT A3 POSITION
EJECT/VDET	EJECT/REVERSE SLOW LOCK	iNS L/R [L]	INSERT Lch/Rch Ⓛ
ENV. SEL	ENVELOPE SELECT	INS. [H]	INSERT Ⓗ
ENVE. OUT	ENVELOPE OUTPUT	INSEL A1	INPUT SELECT A1 POSITION
ENVE. SEL	ENVELOPE SELECT	INSEL A2	INPUT SELECT A2 POSITION
ENV SELECT	ENVELOPE SELECT	INSERT	INSERT
EP [H]	LP Ⓗ	INSERT [H]	INSERT Ⓗ
EP/LP [H]	LP Ⓗ	IO CS	INPUT/OUTPUT CHIP SELECT
EP/LP/SP	LP/SP	JOG1	JOG1
EP/SS [H]	LP/SLOW/STILL/STOP Ⓗ	JOG S3 LED/FOWRD	JOG LED/FORWARD LED
EPROMCS	EPROM CHIP SELECT	JOG/F. LED	JOG LED/FORWARD LED
EX. REC 5V	EXCEPT RECORDING 5V	JSB [H]	JSB Ⓗ
FF/REW [L]	FIRST FORWARD/REWIND Ⓛ	JST. CLCK	JUST CLOCK
FG1 IN	FG1 PULSE INPUT	JST. CLK	JUST CLOCK
FG2 IN	FG2 PULSE INPUT	JST. CLOCK	JUST CLOCK
FILTER ADJUSTMEN	FILTER ADJUSTMENT	L. OUT	Lch OUTPUT
FLY ERASE [H]	FLYING ERASE HEAD ON Ⓗ	L. CH [H]	Lch Ⓗ
FLY ON [H]	FLYING ERASE E HEAD ON Ⓗ	L. CH [L]	Lch Ⓛ
FLY. E [H]	FLYING ERASE HEAD ON Ⓗ	LED (MAIN)	LED (MAIN)
FM MUT [H]	FM AUDIO MUTE Ⓗ	LED (STEREO)	LED (STEREO)
FM MUTE [H]	FM AUDIO MUTE Ⓗ	LED (SUB)	LED (SUB)
FM OUT [L]	FM OUTPUT (L)	LED CKL	LED SERIAL CLOCK
FM OUT [R]	FM OUTPUT (R)	LED CKS	LED SERIAL CLOCK
FM PACK OUT [L]	FM PACK OUTPUT (L)	LED DATA	LED SERIAL DATA
FM PACK OUT [R]	FM PACK OUTPUT (R)	LINE IN 1 [L]	LINE INPUT 1 (L)
FM/BS SEL [L]	FM/BS SELECT (L)	LINE IN 1 [R]	LINE INPUT 1 (R)
FM/BS SEL [R]	FM/BS SELECT (R)	LINE IN 2 [L]	LINE INPUT 2 (L)
FS. CLK	FS CLOCK	LINE IN 2 [R]	LINE INPUT 2 (R)
FUL. E [H]	FULL ERASE HEAD ON Ⓗ	LINE IN V	LINE INPUT VIDEO
FULL. E [H]	FULL ERASE HEAD ON Ⓗ	LINE IN [L]	LINE INPUT (L)
FULL. E. 12V	FULL ERASE 12V	LINE IN [R]	LINE INPUT (R)
GND [A]	GND (ANALOGUE)	LINE OUT [L]	LINE OUTPUT (L)
GND [TU]	GND (TUNER)	LINE OUT [R]	LINE OUTPUT (R)
GND/N. SW. 12V	GND/NON SW 12V	LP [H]	LP Ⓗ

LPTRI [L]	LP TRICK PLAY Ⓛ	P. OFF [L]	POWER OFF Ⓛ
Lch/A. DUB	Lch/AUDIO DUBBING	PAL [H]	PAL Ⓗ
M GND	MOTOR GND	PAL [L]/NTSC [H]	PAL Ⓛ/NTSC Ⓗ
M REG	MOTOR REGULATOR	PB ADJ OUT	PLAYBACK ADJUST OUTPUT
MAIN OUT	MAIN OUTPUT	PB OUT	PLAYBACK OUTPUT
MAIN [L]	MAIN Ⓛ	PB. H	PLAYBACK Ⓗ
MAIN/MONO	MAIN/MONAURAL	PFG	PG/FG
MAX IN	MAXIMAM INPUT	PHOTSN +B	PHOTO SENSOR +B
MES [H]	MESECAM Ⓗ	PICT. CNT	PICTURE CONTROL
MESE [H]	MESECAM Ⓗ	PLAY LED/RVS LED	PLAY LED/REVERSE LED
MESE [L]	MESECAM Ⓛ	PLAY. PO	PLAY POSITION
METER 5V	LEVEL METER 5V	PLAY/R. LED	PLAY LED/REVERSE LED
METER [L]	LEVEL METER (L)	PLY/DEW	PLAY/DEW Ⓗ
METER [R]	LEVEL METER (R)	POWER OFF [L]	POWER OFF Ⓛ
METER. L/AVS	LEVEL METER (L)	PREROLL [H]	PREROLL Ⓡ
METER. R/AVC	LEVEL METER (R)	PWRFAIL	POWER FAILURE DETECT
MI/BI [L]	MIX Ⓗ/BILIGUAL	R. CH [H]	Rch Ⓗ
MIC GND	MIC GND	R. CH [L]	Rch Ⓛ
MIC IN	MIC INPUT	R. ST	RESET
MIC IN [L]	MIC INPUT (L)	R/S/F	REVERSE Ⓗ/STOP Ⓜ/FORWARD Ⓛ
MIC IN [R]	MIC INPUT (R)	RCH [H]	Rch Ⓗ
MIC [H]	MIC Ⓗ	REC 12V	RECORDING 12V
MIX [H]	MIX Ⓗ	REC CHROMA	RECORDING CHROMINANCE SIGNAL
MIX [H]/CINEMA [L]	MIX Ⓗ/CINEMA SOUND Ⓛ	REC H	RECORDING Ⓗ
MIX/CINE	MIX Ⓗ/CINEMA SOUND Ⓛ	REC IN	RECORDING INPUT
MIX/CINEMA [L]	MIX Ⓗ/CINEMA SOUND Ⓛ	REC OUT [L]	RECORDING OUTPUT Ⓛ
MN. H/M. L	MONAURAL Ⓗ/MAIN Ⓛ	REC START	RECORDING START
MN. H/MAI. L	MONAURAL Ⓗ/MAIN Ⓛ	REC VR [C]	RECORDING VOLUME (COMMON)
MN2/MES. L	MONAURAL 2/MESECAM Ⓛ	REC VR [L]	RECORDING VOLUME (L)
MODE SEL	AUDIO MODE SELECT	REC VR [R]	RECORDING VOLUME (R)
MODE SW	AUDIO MODE SW	REC Y	RECORDING LUMINANCE SIGNAL
MODE. S. IN	AUDIO MODE SELECT INPUT	REC [H]	RECORDING Ⓗ
MODE. S. OUT	AUDIO MODE SELECT OUTPUT	REC. C	RECORDING CHROMINANCE SIGNAL
MONO [H]	MONAURAL Ⓗ	REC. Y	RECORDING LUMINANCE SIGNAL
MONO [H]/MAIN [L]	MONAURAL Ⓗ/MAIN Ⓒ	REC/EE CTL	RECORDING/EE CONTROL
MONO2 [L]	MONAURAL 2	REEL-T	REEL PULSE (TAKE-UP)
MONO2/MESE [FM(L)]	MONAURAL 2/MESECAM (FM Ⓛ)	REEL-S	REEL PULSE (SUPPLY)
MOTOR GND	MOTOR GND	REGULATOR FILTER	REGULATOR FILTER
MUTE	MUTE	RESET	RESET
N. A. REC [L]	NORMAL AUDIO RECORDING	REV M F/R	REVIEW MOTOR FORWARD/REVERSE
N. SW 12V	NON SW 12V		
N. SW. 5. DET	NON SW 5V DETECT	REV M V1	REVIEW MOTOR V1
NICAM	NICAM	REV M V2	REVIEW MOTOR V2
NICAM [L]	NICAM Ⓛ	REV MOTOR F/R	REVIEW MOTOR FORWARD/REVERSE
NOL [H]	PAL Ⓗ/4.43 NTSC Ⓜ/3.58 NTSC Ⓛ		
NOR/SOFT [H]	NORMAL/SOFT TAPE PLAY Ⓗ	REV MOTOR V1	REVIEW MOROR V1
NORMAL [H]	NORMAL Ⓗ	REV MOTOR V2	REVIEW MOTOR V2
NR BIAS	NR BIAS	REV MOTOR [+]	REVIEW MOTOR (+)
NTSC [L]	NTSC Ⓛ	REV MOTOR [−]	REVIEW MOTOR (−)
OCH	CONTROL AGC CIRCUIT	REV. M. GND	REVIEW MOTOR GND
OUT	OUTPUT	RF. CHROMA	RF CHROMINANCE SIGNAL
P-OFF [H]	POWER OFF Ⓗ	RF OUT	RF OUTPUT
P-OFF [L]	POWER OFF Ⓛ	RF Y	RF LUMINANCE SIGNAL
P. FAIL	POWER FAILURE DETECT	RF. Y. IN	RF LUMINANCE SIGNAL INPUT
P. OFF [H]	POWER OFF Ⓗ	RF. Y. OUT	RF LUMINANCE SIGNAL OUTPUT

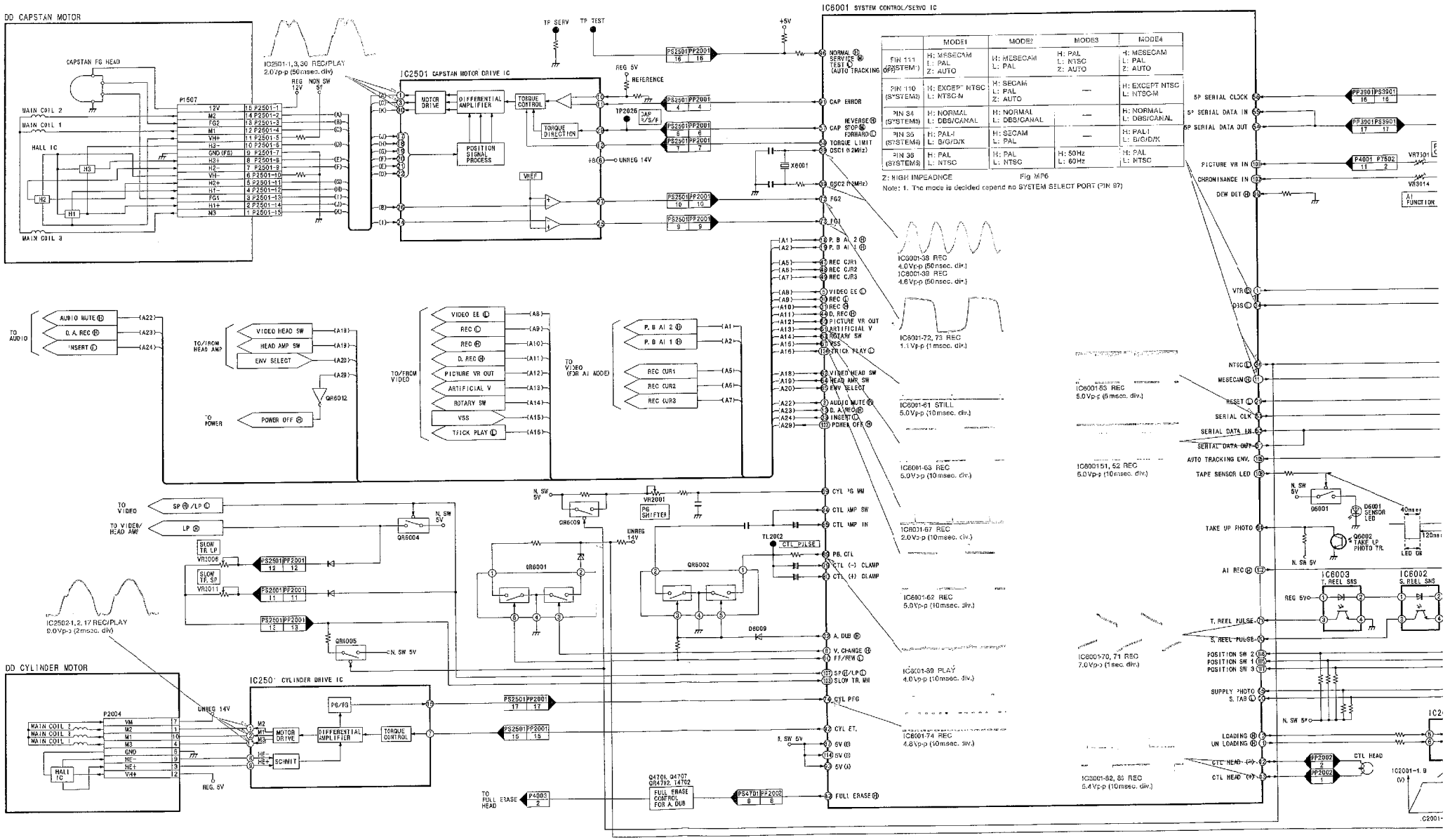
ROTAR. SW	ROTARY SW	T. BUSCLK	TIMER BUS CLOCK
ROTARY	ROTARY SW	T. BUSLSN	TIMER BUS LISTEN
RST	RESET	T. BUSTLK	TIMER BUS TALK
RST [L]	RESET Ⓛ	T. END [L]	TAPE END Ⓛ
Rch/INST	Rch/INSERT	T. PHOTO	TAKE-UP PHOTO TRANSISTOR
S IN	SERIAL DATA INPUT	TAPE END [L]	TAPE END Ⓛ
S OUT	SERIAL DATA OUTPUT	TAPE END [L]/CAM	TAPE END Ⓛ/CAMERA PAUSE
S-PHOTO	SUPPLY PHOTO TRANSISTOR	TEST	TEST MODE
S-RL. PLS	SUPPLY REEL PULSE	TPZ	TRAPEZOIDAL WAVE CIRCUIT
S. CLK	SERIAL CLOCK	TRIC [L]	TRIC PLAY Ⓛ
S. CLK/AV	SERIAL CLOCK/AV	TRICK [L]	TRIC PLAY Ⓛ
S. DATA	SERIAL DATA	TRK. ENV	AUTO TRACKING ENVELOPE DETECT
S. DATA/A	SERIAL DATA	TU. AUDIO	TUNER AUDIO
S. PHOTO	SUPPLY PHOTO TRANSISTOR	TU. GND	TUNER GND
S. TAB [L]	SAFETY TAB SW ON Ⓛ	TU. V. IN	TUNER VIDEO SIGNAL INPUT
S/P/N	SECAM/PAL/NTSC	TU. VIDEO	TUNER VIDEO
SC IN	SERIAL CLOCK INPUT	TUN NOR IN	TUNER NORMAL INPUT
SC OUT	SERIAL CLOCK OUTPUT	TUN R	TUNER AUDIO (R)
SCK SELECT	SERIAL CLOCK SELECT	TUN. AUDIO IN	TUNER AUDIO INPUT
SEL OUT [L]	SELECT OUTPUT (L)	TUNER 12V	TUNER 12V
SEL OUT [R]	SELECT OUTPUT (R)	TUNER L	TUNER AUDIO (L)
SHUTTLE 1	SHUTTLE 1	TUNER V IN	TUNER VIDEO SIGNAL INPUT
SIF	SOUND INTERMEDIATE FREQUENCY	TUNER [L]	TUNER AUDIO (L)
SLMUT [H]	INPUT SELECT MUTE Ⓗ	TUNER [N]	TUNER AUDIO (NORMAL)
SLNID [+]	SOLENOID (+)	TUNER [R]	TUNER AUDIO (R)
SLNID [−]	SOLENOID (−)	TUNER. 12	TUNER 12V
SLW TR. MM	SLOW TRACKING MONO MULTI	TUOFF [H]	TUNER OFF Ⓗ
SLW TR. REF	SLOW TRACKING REFERENCE VOLTAGE	TV. AUDIO	TV AUDIO
		TV/VTR	TV/VTR
SNS. GND	SENSOR GND	TXTON [L]	TEXT ON Ⓛ
SOFT [H]	SOFT TAPE PLAY Ⓗ	U. REG45V	UNREGULATOR 45V
SOFT [H]/NORMAL	SOFT TAPE PLAY Ⓗ/NORMAL Ⓗ	UNREG	UNREGULATOR
SOLENOID ON [L]	SOLENOID ON Ⓛ	UNREG19V	UNREGULATOR 19V
SP [H]	SP Ⓗ	V. REF	REFERENCE VOLTAGE
SP/L/SLP	SP/LP	V. EE [H]	VIDEO EE Ⓗ
SSS [L]	SLOW/STILL/STOP	V. EE [L]	VIDEO EE Ⓛ
STEREO LED	STEREO LED	VCO REF	RERERENCE OSCILLATER
STEREO [H]	STEREO Ⓗ	VD. IN	VIDEO SIGNAL INPUT
STEREO [L]	STEREO Ⓛ	VD. OUT	VIDEO SIGNAL OUTPUT
STOP. PO	STOP POSITION	VIDEO EE [L]	VIDEO EE Ⓛ
STOP/5V	STOP POSITION/5V	VIDEO N	VIDEO SIGNAL INPUT
STOP1/TAPE SEL	STOP1 POSITION/TAPE SELECT	VIDEO OUT	VIDEO SIGNAL OUTPUT
STOP1/PAL:ST	STOP1 POSITION/PAL	VM	MOTOR VOLTAGE
STOP2. PO	STOP 2 POSITION	VM DOWN [L]	MOTOR VOLTAGE DOWN Ⓛ
STOP2/S-TAB	STOP 2 POSITION/SAFETY TAB SW	VSS	VERTICAL SYNC SIGNAL
STREO [H]	STEREO Ⓡ	VTR [H]	VTR Ⓗ
SUB BIAS	SUB BIAS	VTR. 12V	VTR 12V
SUB. SW	SUB SW	X IN	OSCILLATOR INPLT
SVHS CAS [L]	S-VHS CASSETTE Ⓒ	X OUT	OSCILLATOR OUTPUT
SW. 5. DET	SW 5V DETECT		
SYNC [L]	SYNC Ⓛ		
SYSCON 5V	SYSTEM CONTROL 5V		
SYSTEM	SYSTEM SW		
T-PHOTO	TAKE-UP PHOTO TRANSISTOR		
T-RL. PLS	TAKE-UP REEL PULSE		

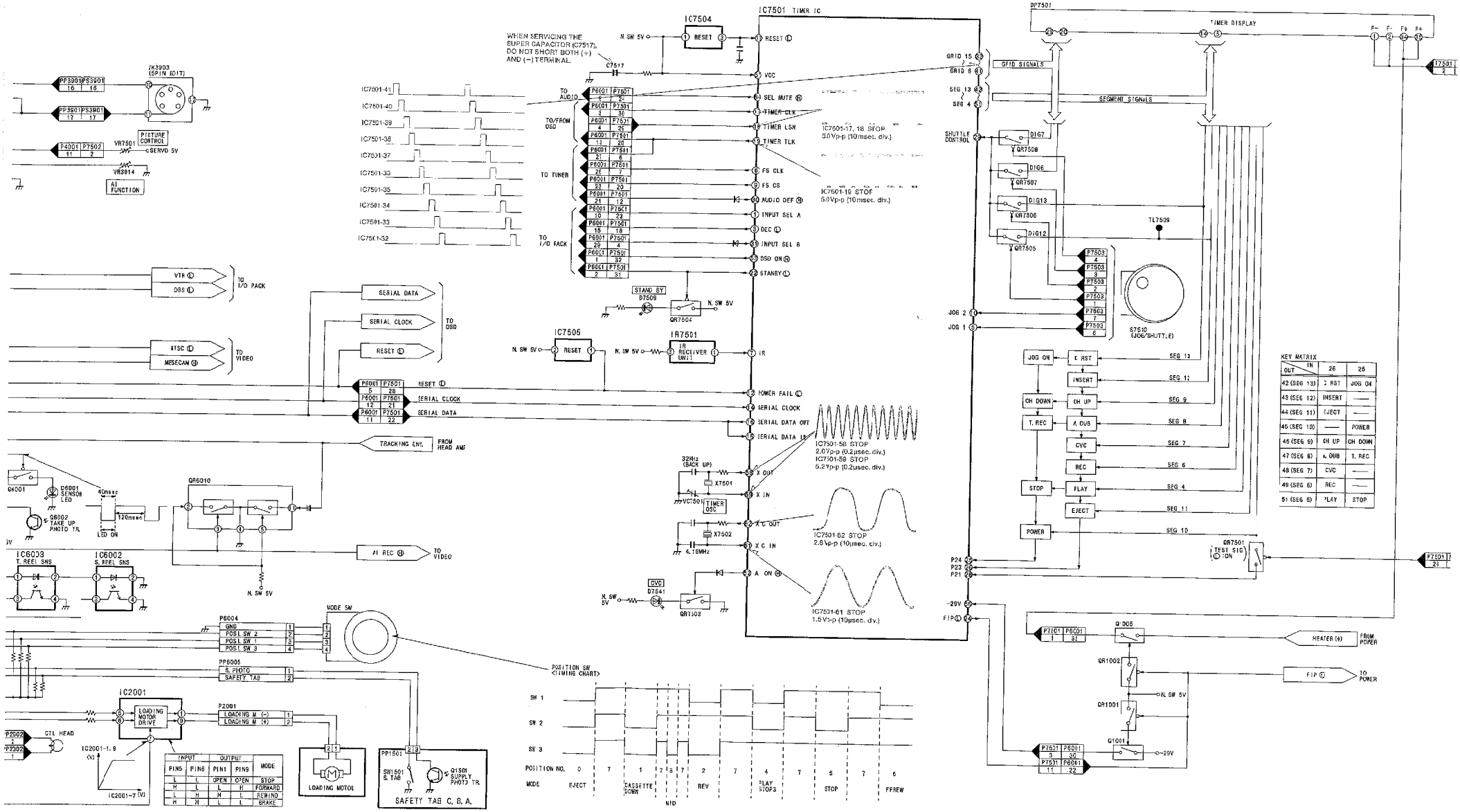
TRUTH TABLE

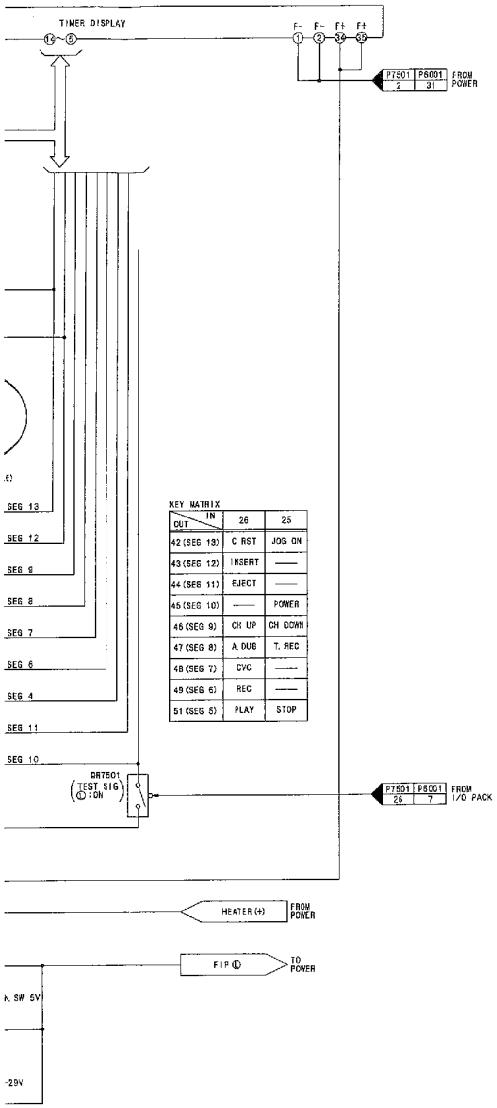
IC3904 INPUT								IC3904 OUTPUT								VIDEO OUTPUT RESULT				AUDIO OUTPUT RESULT						
POWER	AV2 SLCT	DEC SLCT	EE/VV	OSD ON	INPUT CH			AV2 PB	AV2 OUT SLCT		VTR IN SLCT		AV1 OUT SLCT	AV1 PB	RGB SW	FM INS	AV1 OUT	AV2 OUT	VTR IN	VTR OUT	AV1 OUT (L)	AV1 OUT (R)	AV2 OUT (L)	AV2 OUT (R)	AUDIO IN (L)	AUDIO IN (R)	AUDIC OUT
⑥	④	①	⑦	⑪	②	⑧	⑨	③	⑯	⑰	⑱	⑲	②	⑬	⑭	⑮	(AV1-⑲)	(AV2-⑲)	(PP3901-3)	(PP3901-7)	(AV1-③)	(AV1-①)	(AV2-③)	(AV2-①)	(PP3902-9)	(PP3902-10)	(PP3902-6)
OFF Ⓛ	----	----	----	----	--	--	--	L	L	L	L	L	L	L	L	L	AV2 IN	AV1 IN	TUNER	TUNER	AV2 IN (L)	AV2 IN (R)	AV1 IN (L)	AV1 IN (R)	-----	-----	TUNER
								H	L	L	L	L	L	H	H	L	AV2 IN	AV1 IN	TUNER	TUNER	AV2 IN (L)	AV2 IN (R)	AV1 IN (L)	AV1 IN (R)	-----	-----	TUNER
ON Ⓗ	VTR Ⓗ	----	EE Ⓗ	OFF Ⓛ	H	L	L	----	H	H	L	L	H	L	L	L	VTR OUT	VTR OUT	TUNER	TUNER	AUDIO OUT	AUDIO OUT	AUDIO OUT	AUDIO OUT	-----	-----	TUNER
					L	L	L	----	H	H	L	L	H	L	L	L	VTR OUT	VTR OUT	TUNER	TUNER	AUDIO OUT	AUDIO OUT	AUDIO OUT	AUDIO OUT	-----	-----	TUNER
					H	L	H	----	H	H	L	H	H	L	L	H	VTR OUT	VTR OUT	AV1 IN	AV1 IN	AUDIO OUT	AUDIO OUT	AUDIO OUT	AUDIO OUT	AV1 IN (L)	AV1 IN (R)	AV1 IN (L)
					H	H	L	----	H	H	H	L	H	L	H	H	VTR OUT	VTR OUT	AV2 IN	AV2 IN	AUDIO OUT	AUDIO OUT	AUDIO OUT	AUDIO OUT	AV2 IN (L)	AV2 IN (R)	AV2 IN (L)
				ON Ⓗ	H	L	L	----	H	H	L	L	H	H	L	L	VTR OUT	VTR OUT	TUNER	TUNER	AUDIO OUT	AUDIO OUT	AUDIO OUT	AUDIO OUT	-----	-----	TUNER
					L	L	L	----	H	H	L	L	H	H	L	L	VTR OUT	VTR OUT	TUNER	TUNER	AUDIO OUT	AUDIO OUT	AUDIO OUT	AUDIO OUT	-----	-----	TUNER
					H	L	H	----	H	H	L	H	H	H	L	H	VTR OUT	VTR OUT	AV1 IN	AV1 IN	AUDIO OUT	AUDIO OUT	AUDIO OUT	AUDIO OUT	AV1 IN (L)	AV1 IN (R)	AV1 IN (L)
					H	H	L	----	H	H	H	L	H	H	H	H	VTR OUT	VTR OUT	AV2 IN	AV2 IN	AUDIO OUT	AUDIO OUT	AUDIO OUT	AUDIO OUT	AV2 IN (L)	AV2 IN (R)	AV2 IN (L)
			VV Ⓛ	----	H	L	L	----	H	H	L	L	H	H	L	L	VTR OUT	VTR OUT	TUNER	PLAYBACK	AUDIO OUT	AUDIO OUT	AUDIO OUT	AUDIO OUT	-----	-----	PLAYBACK
					L	L	L	----	H	H	L	L	H	H	L	L	VTR OUT	VTR OUT	TUNER	PLAYBACK	AUDIO OUT	AUDIO OUT	AUDIO OUT	AUDIO OUT	-----	-----	PLAYBACK
					H	L	H	----	H	H	L	H	H	H	L	H	VTR OUT	VTR OUT	AV1 IN	PLAYBACK	AUDIO OUT	AUDIO OUT	AUDIO OUT	AUDIO OUT	AV1 IN (L)	AV1 IN (R)	PLAYBACK
					H	H	L	----	H	H	H	L	H	H	L	H	VTR OUT	VTR OUT	AV2 IN	PLAYBACK	AUDIO OUT	AUDIO OUT	AUDIO OUT	AUDIO OUT	AV2 IN (L)	AV2 IN (R)	PLAYBACK
	DECODER Ⓒ	TV Ⓗ	----	OFF Ⓛ	H	L	L	L	L	L	L	L	H	L	L	L	VTR OUT	AV1 IN	TUNER	TUNER	AUDIO OUT	AUDIO OUT	AV1 IN (L)	AV1 IN (R)	-----	-----	TUNER
								H	L	L	L	L	L	H	H	L	AV2 IN	AV1 IN	TUNER	TUNER	AV2 IN (L)	AV2 IN (R)	AV1 IN (L)	AV1 IN (R)	-----	-----	TUNER
					L	L	L	L	L	F	L	L	H	L	L	L	VTR OUT	TUNER IN	TUNER	TUNER	AUDIO OUT	AUDIO OUT	TUN A IN	TUN A IN	-----	-----	TUNER
								H	L	F	H	L	H	L	L	H	VTR OUT	TUNER IN	AV2 IN	AV2 IN	AUDIO OUT	AUDIO OUT	TUN A IN	TUN A IN	AV2 IN (L)	AV2 IN (R)	AV2 IN (L)
					H	L	L	L	L	L	L	L	H	H	L	H	VTR OUT	AV1 IN	AV1 IN	AV1 IN	AUDIO OUT	AUDIO OUT	AV1 IN (L)	AV1 IN (R)	AV1 IN (L)	AV1 IN (R)	AV1 IN (L)
								H	L	L	H	L	L	H	H	H	AV2 IN	AV1 IN	AV2 IN	AV2 IN	AV2 IN (L)	AV2 IN (R)	AV1 IN (L)	AV1 IN (R)	AV2 IN (L)	AV2 IN (R)	AV2 IN (L)
					H	H	L	L	L	L	H	L	H	H	L	L	VTR OUT	AV1 IN	AV2 IN	AV2 IN	AUDIO OUT	AUDIO OUT	AV1 IN (L)	AV1 IN (R)	AV2 IN (L)	AV2 IN (R)	AV2 IN (L)
								H	L	L	H	L	L	H	H	H	AV2 IN	AV1 IN	AV2 IN	AV2 IN	AV2 IN (L)	AV2 IN (R)	AV1 IN (L)	AV1 IN (R)	AV2 IN (L)	AV2 IN (R)	AV2 IN (L)
				ON Ⓗ	H	L	L	L	L	L	L	L	H	H	L	L	VTR OUT	AV1 IN	TUNER	TUNER	AUDIO OUT	AUDIO OUT	AV1 IN (L)	AV1 IN (R)	-----	-----	TUNER
								H	L	L	L	L	H	H	L	L	VTR OUT	AV1 IN	TUNER	TUNER	AUDIO OUT	AUDIO OUT	AV1 IN (L)	AV1 IN (R)	-----	-----	TUNER
					L	L	L	L	L	H	L	L	H	H	L	L	VTR OUT	TUNER IN	TUNER	TUNER	AUDIO OUT	AUDIO OUT	TUN A IN	TUN A IN	-----	-----	TUNER
								H	L	H	H	L	H	H	H	H	VTR OUT	TUNER IN	AV2 IN	AV2 IN	AUDIO OUT	AUDIO OUT	TUN A IN	TUN A IN	AV2 IN (L)	AV2 IN (R)	AV2 IN (L)
					H	L	L	L	L	L	L	L	H	H	L	H	VTR OUT	AV1 IN	AV1 IN	AV1 IN	AUDIO OUT	AUDIO OUT	AV1 IN (L)	AV1 IN (R)	AV1 IN (L)	AV1 IN (R)	AV1 IN (L)
								H	L	L	H	L	H	H	H	H	VTR OUT	AV1 IN	AV2 IN	AV2 IN	AUDIO OUT	AUDIO OUT	AV1 IN (L)	AV1 IN (R)	AV2 IN (L)	AV2 IN (R)	AV2 IN (L)
					H	H	L	L	L	L	H	L	H	H	L	L	VTR OUT	AV1 IN	AV2 IN	AV2 IN	AUDIO OUT	AUDIO OUT	AV1 IN (L)	AV1 IN (R)	AV2 IN (L)	AV2 IN (R)	AV2 IN (L)
								H	L	L	H	L	H	H	H	H	VTR OUT	AV1 IN	AV2 IN	AV2 IN	AUDIO OUT	AUDIO OUT	AV1 IN (L)	AV1 IN (R)	AV2 IN (L)	AV2 IN (R)	AV2 IN (L)
		VTR Ⓛ	EE Ⓗ	OFF Ⓛ	H	L	L	L	L	L	L	L	H	H	L	L	VTR OUT	AV1 IN	TUNER	TUNER	AUDIO OUT	AUDIO OUT	AV1 IN (L)	AV1 IN (R)	-----	-----	TUNER
								H	L	L	L	L	H	H	L	L	VTR OUT	AV1 IN	TUNER	TUNER	AUDIO OUT	AUDIO OUT	AV1 IN (L)	AV1 IN (R)	-----	-----	TUNER
					L	L	L	L	L	H	L	L	H	H	L	L	VTR OUT	TUNER IN	TUNER	TUNER	AUDIO OUT	AUDIO OUT	TUN A IN	TUN A IN	-----	-----	TUNER
								H	L	H	H	L	H	H	H	H	VTR OUT	TUNER IN	AV2 IN	AV2 IN	AUDIO OUT	AUDIO OUT	TUN A IN	TUN A IN	AV2 IN (L)	AV2 IN (R)	AV2 IN (L)
					H	L	L	L	L	L	H	L	H	H	L	H	VTR OUT	AV1 IN	AV1 IN	AV1 IN	AUDIO OUT	AUDIO OUT	AV1 IN (L)	AV1 IN (R)	AV1 IN (L)	AV1 IN (R)	AV1 IN (L)
								H	L	L	H	L	H	H	H	H	VTR OUT	AV1 IN	AV2 IN	AV2 IN	AUDIO OUT	AUDIO OUT	AV1 IN (L)	AV1 IN (R)	AV2 IN (L)	AV2 IN (R)	AV2 IN (L)
					H	H	L	L	L	L	H	L	H	H	L	L	VTR OUT	AV1 IN	AV2 IN	AV2 IN	AUDIO OUT	AUDIO OUT	AV1 IN (L)	AV1 IN (R)	AV2 IN (L)	AV2 IN (R)	AV2 IN (L)
								H	L	L	H	L	H	H	H	H	VTR OUT	AV1 IN	AV2 IN	AV2 IN	AUDIO OUT	AUDIO OUT	AV1 IN (L)	AV1 IN (R)	AV2 IN (L)	AV2 IN (R)	AV2 IN (L)
				ON Ⓗ	H	L	L	L	L	L	L	L	H	H	L	L	VTR OUT	AV1 IN	TUNER	TUNER	AUDIO OUT	AUDIO OUT	AV1 IN (L)	AV1 IN (R)	-----	-----	TUNER
								H	L	L	L	L	H	H	L	L	VTR OUT	AV1 IN	TUNER	TUNER	AUDIO OUT	AUDIO OUT	AV1 IN (L)	AV1 IN (R)	-----	-----	TUNER
					L	L	L	L	L	H	L	L	H	H	L	L	VTR OUT	TUNER IN	TUNER	TUNER	AUDIO OUT	AUDIO OUT	TUN A IN	TUN A IN	-----	-----	TUNER
								H	L	H	H	L	H	H	H	H	VTR OUT	TUNER IN	AV2 IN	AV2 IN	AUDIO OUT	AUDIO OUT	TUN A IN	TUN A IN	AV2 IN (L)	AV2 IN (R)	AV2 IN (L)
					H	L	L	L	L	L	H	L	H	H	L	H	VTR OUT	AV1 IN	AV1 IN	AV1 IN	AUDIO OUT	AUDIO OUT	AV1 IN (L)	AV1 IN (R)	AV1 IN (L)	AV1 IN (R)	AV1 IN (L)
								H	L	L	H	L	H	H	H	H	VTR OUT	AV1 IN	AV2 IN	AV2 IN	AUDIO OUT	AUDIO OUT	AV1 IN (L)	AV1 IN (R)	AV2 IN (L)	AV2 IN (R)	AV2 IN (L)
					H	H	L	L	L	L	H	L	H	H	L	L	VTR OUT	AV1 IN	AV2 IN	AV2 IN	AUDIO OUT	AUDIO OUT	AV1 IN (L)	AV1 IN (R)	AV2 IN (L)	AV2 IN (R)	AV2 IN (L)
								H	L	L	H	L	H	H	H	H	VTR OUT	AV1 IN	AV2 IN	AV2 IN	AUDIO OUT	AUDIO OUT	AV1 IN (L)	AV1 IN (R)	AV2 IN (L)	AV2 IN (R)	AV2 IN (L)
			VV Ⓛ	----	H	L	L	L	L	L	H	L	H	H	L	L	VTR OUT	AV1 IN	TUNER	PLAYBACK	AUDIO OUT	AUDIO OUT	AV1 IN (L)	AV1 IN (R)	-----	-----	P_AYBACK
								H	L	L	L	L	H	H	L	L	VTR OUT	AV1 IN	TUNER	PLAYBACK	AUDIO OUT	AUDIO OUT	AV1 IN (L)	AV1 IN (R)	-----	-----	P_AYBACK
					L	L	L	L	L	H	L	L	H	H	L	L	VTR OUT	TUNER IN	TUNER	PLAYBACK	AUDIO OUT	AUDIO OUT	TUN A IN	TUN A IN	-----	-----	P_AYBACK
								H	L	H	H	L	H	H	H	H	VTR OUT	TUNER IN	AV2 IN	PLAYBACK	AUDIO OUT	AUDIO OUT	TUN A IN	TUN A IN	AV2 IN (L)	AV2 IN (R)	P_AYBACK
					H	L	L	L	L	L	H	L	H	H	L	H	VTR OUT	AV1 IN	AV1 IN	PLAYBACK	AUDIO OUT	AUDIO OUT	AV1 IN (L)	AV1 IN (R)	AV1 IN (L)	AV1 IN (R)	P_AYBACK
								H	L	L	H	L	H	H	H	H	VTR OUT	AV1 IN	AV2 IN	PLAYBACK	AUDIO OUT	AUDIO OUT	AV1 IN (L)	AV1 IN (R)	AV2 IN (L)	AV2 IN (R)	P_AYBACK
					H	H	L	L	L	L	H	L	H	H	L	L	VTR OUT	AV1 IN	AV2 IN	PLAYBACK	AUDIO OUT	AUDIO OUT	AV1 IN (L)	AV1 IN (R)	AV2 IN (L)	AV2 IN (R)	P_AYBACK
								H	L	L	H	L	H	H	H	H	VTR OUT	AV1 IN	AV2 IN	PLAYBACK	AUDIO OUT	AUDIO OUT	AV1 IN (L)	AV1 IN (R)	AV2 IN (L)	AV2 IN (R)	PLAYBACK

INPUT CH SELECT			INPUT CH
DBS/CANAL	INPUT SLCT B	INPUT SLCT A	
②	⑧	⑨	
H	L	L	NORMAL TUNER
L	L	L	DBS/C+ TUNER
H	L	H	AV1
H	H	L	AV2

3-2. SYSTEM CONTROL & SERVO BLOCK DIAGRAM

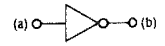
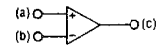
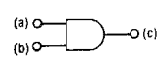
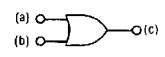
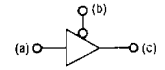
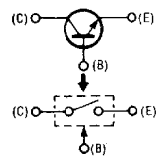
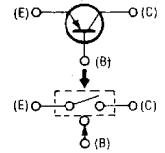
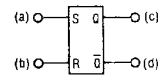



IC7501 TIMER IC
IC7504
WHEN SERVICING THE SUPER CAPACITOR (C7517), DO NOT SHORT BOTH (+) AND (–) TERMINAL.
C7517
RESET
VCC
SEL MUTE
TIMER CLK
TIMER LCH
TIMER LTK
FS CLK
FS CS
AUDIO DEF
INPUT SEL A
DEC
INPUT SEL B
DSO ON
STANBY
TO AUDIO
TO/FROM OSD
TO TUNER
TO I/O PACK
IC7501-41
IC7501-40
IC7501-39
IC7501-38
IC7501-37
IC7501-36
IC7501-35
IC7501-34
IC7501-33
IC7501-32
IC7501-17, 18 STOP 5.0Vp-p (10msec. div.)
IC7501-19 STOP 5.0Vp-p (10msec. div.)
STAND BY
D7509
N. SW 5V
QR7504
IC7505
IR7501
IR RECEIVER UNIT
IR
VTR
DBS
NTSC
MESECAM
TO VIDEO
SERIAL DATA
SERIAL CLOCK
RESET
TO DSD
POWER FAIL
SERIAL CLOCK
SERIAL DATA OUT
SERIAL DATA IN
TRACKING ENV.
FROM HEAD AMP
IC7501-58 STOP 2.0Vp-p (0.2μsec. div.)
IC7501-59 STOP 0.2Vp-p (0.2μsec. div.)
32MHz (BACK UP)
X7501
TIMER OSC
X7502
4.19MHz
X OUT
X IN
X C OUT
X C IN
A ON
IC7501-62 STOP 2.6Vp-p (10μsec. div.)
IC7501-61 STOP 1.5Vp-p (10μsec. div.)
CVC
D7541
QR7508
D6001 SENSOR LED
Q6002 TAKE UP PHOTO TR
40msec
120msec
LED ON
QR6010
AI REC
TO VIDEO
IC6003 T. REEL SNS
IC6002 S. REEL SNS
MODE SW
P6004
GND
POSI. SW 2
POSI. SW 1
POSI. SW 3
PP6005
S. PHOTO
SAFETY TAB
IC2001
LOADING MOTOR DRIVE
P2001
LOADING M (–)
LOADING M (+)
P2002
P2302
CTL HEAD
IC2001-1, 9 (V)
IC2001-7 (V)
INPUT
OUTPUT
MODE
PIN5
PIN6
PIN1
PIN9
OPEN
STOP
FORWARD
REWIND
BRAKE
LOADING MOTOR
PP1501
SW1501 S. TAB
Q1501 SUPPLY PHOTO TR
SAFETY TAB C, B, A
POSITION SW <TIMING CHART>
SW 1
SW 2
SW 3
POSITION NO.
MODE
EJECT
CASSETTE DOWN
REV
PLAY STOP3
STOP
FFREW
MID
DP7501
TIMER DISPLAY
GRID SIGNALS
SEGMENT SIGNALS
GRID 15
GRID 6
SEG 13
SEG 4
SHUTTLE CONTROL
DIG7
DIG6
DIG13
DIG12
QR7508
QR7507
QR7506
QR7505
TL7509
S7510 (JOG/SHUTTLE)
JOG 2
JOG 1
JOG ON
C. RST
INSERT
CH DOWN
CH UP
T. REC
A. DUB
CVC
REC
STOP
PLAY
EJECT
POWER
SEG 13
SEG 11
SEG 9
SEG 8
SEG 7
SEG 6
SEG 4
SEG 11
SEG 10
KEY MATRIX
IN
OUT
26
25
42 (SEG 13)
C. RST
JOG ON
43 (SEG 12)
INSERT
44 (SEG 11)
EJECT
45 (SEG 10)
POWER
46 (SEG 9)
CH UP
CH DOWN
47 (SEG 8)
A. DUB
T. REC
48 (SEG 7)
CVC
49 (SEG 6)
REC
51 (SEG 5)
PLAY
STOP
QR7501
TEST SIG (ON)
P24
P23
P21
–29V
FIP
Q1005
HEATER (H)
FROM POWER
QR1002
QR1001
Q1001
FIP
TO POWER
N. SW 5V
–29V

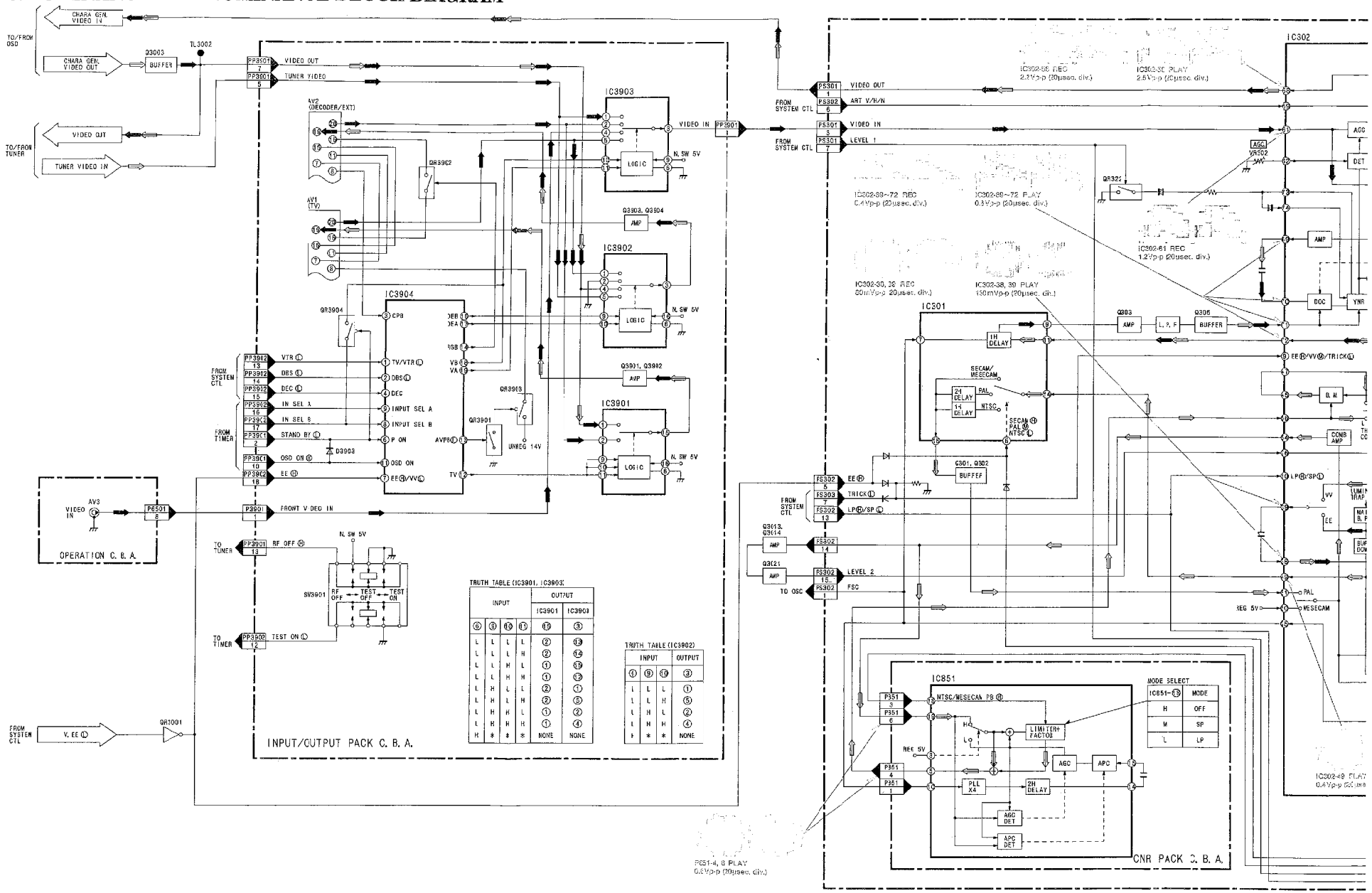


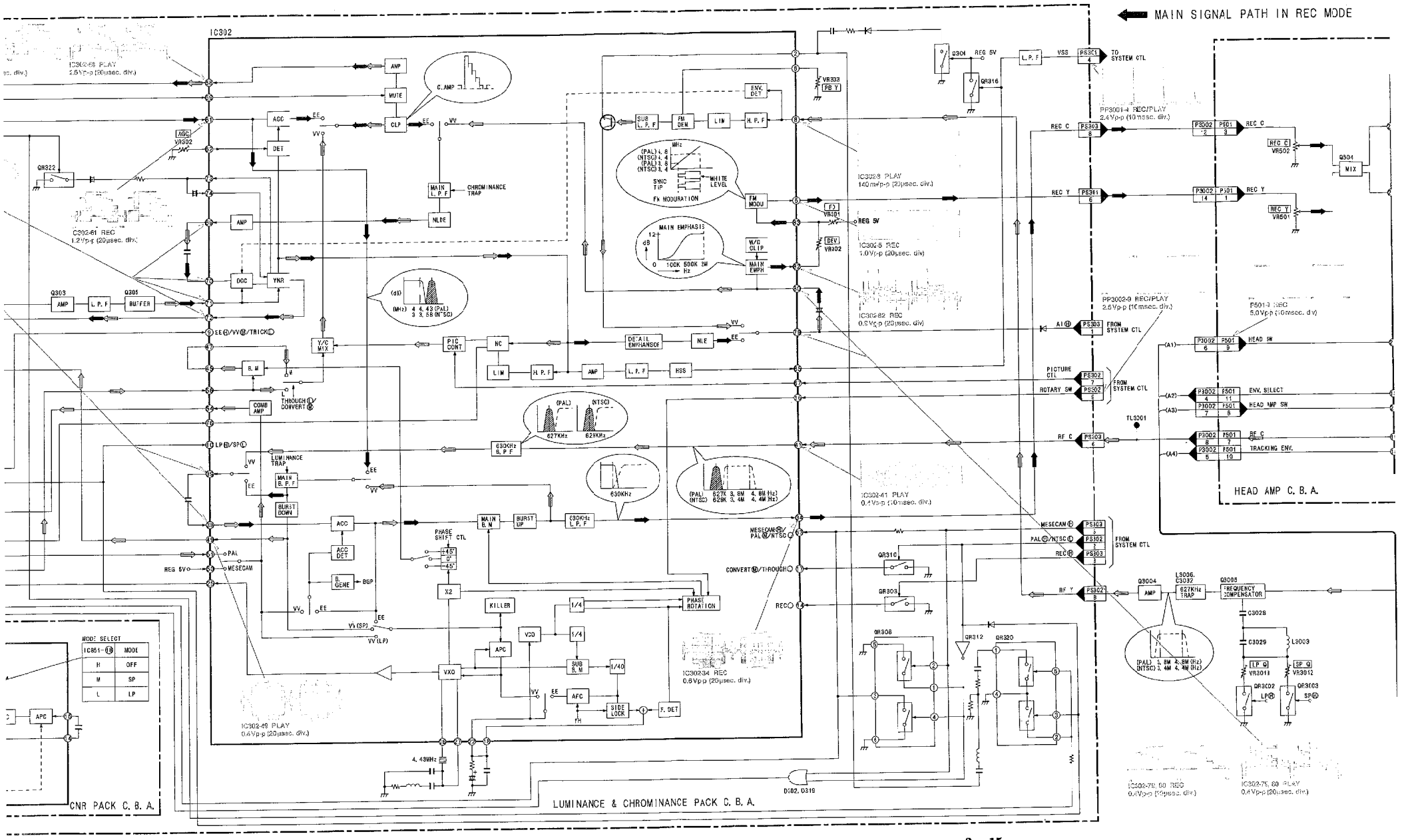
KEY MATRIX

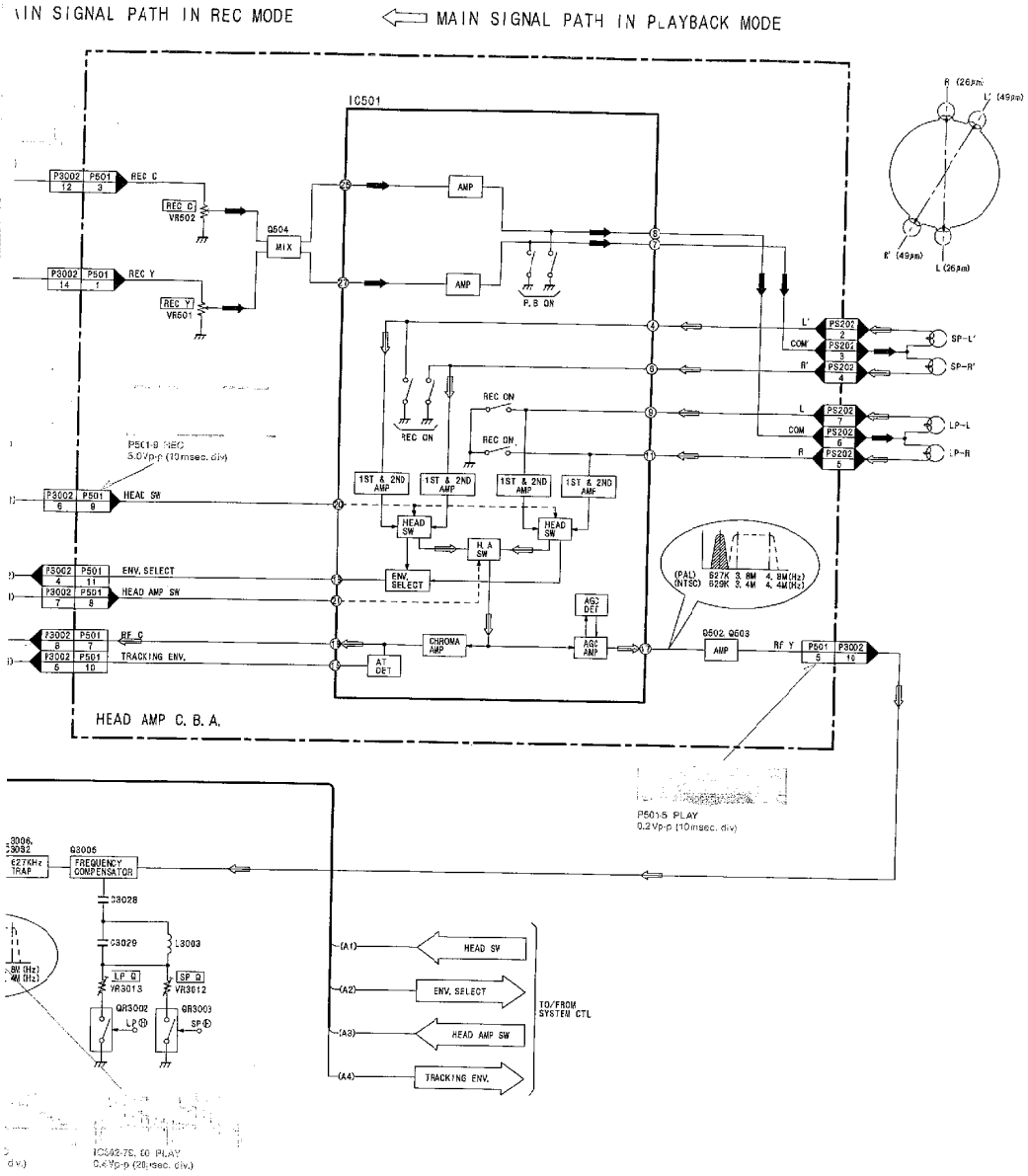
IN / OUT	26	25
42 (SEG 13)	C RST	JOG ON
43 (SEG 12)	INSERT	—
44 (SEG 11)	EJECT	—
45 (SEG 10)	—	POWER
46 (SEG 9)	CH UP	CH DOWN
47 (SEG 8)	A DUB	T. REC
48 (SEG 7)	CVC	—
49 (SEG 6)	REC	—
51 (SEG 5)	PLAY	STOP

SYMBOL	TRUTH VALUE TABLE
INVERTER 	IN (a): H L / OUT (b): L H
COMPARTOR 	IN (a)/(b): (a)>(b) / (a)<(b) / OUT (c): H / L
AND CIRCUIT 	IN (a): L L H H / IN (b): L H L H / OUT (c): L L L H
OR CIRCUIT 	IN (a): L L H H / IN (b): L H L H / OUT (c): L H H H
THREE STATES BUFFER 	IN (a): H L H or L / IN (b): L L H / OUT (c): H L ※
	※ High Impedance
TR. SW (NPN TYPE) 	BASE: H / L — TR. SW: ON / OFF
TR. SW (PNP TYPE) 	BASE: H / L — TR. SW: OFF / ON
R-S TYPE FLIP-FLOP 	IN (a): L L ⊓ / IN (b): L ⊓ L / OUT (c): ※ L H / OUT (d): ◆ H L
	※ Initial condition is maintained. ◆ Initial condition is reversed.

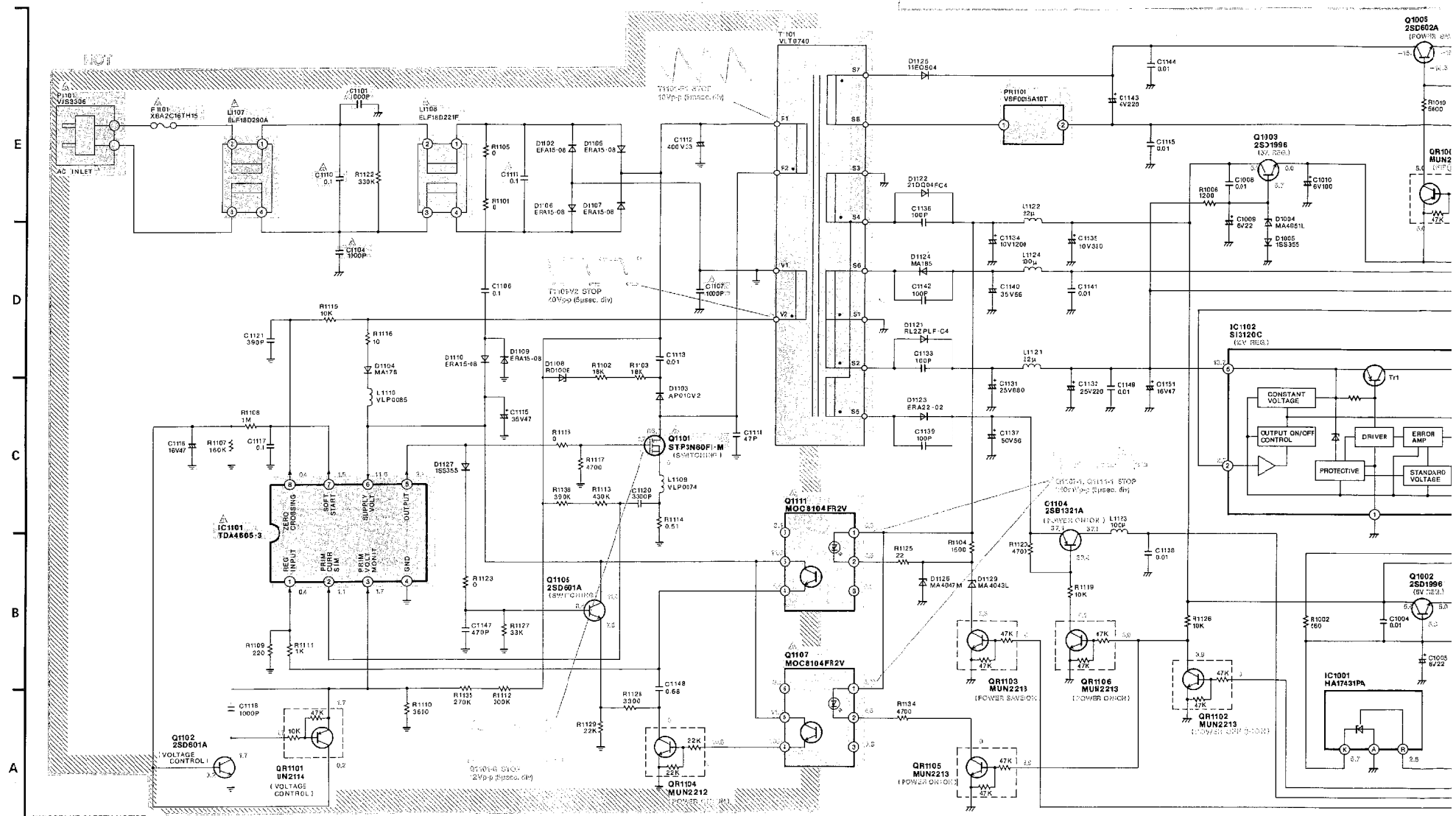
3-3. LUMINANCE & CHROMINANCE BLOCK DIAGRAM




MAIN SIGNAL PATH IN REC MODE
IC302
IC302-68 PLAY 2.5Vp-p (20μsec. div.)
C302-61 REC 1.2Vp-p (20μsec. div.)
IC302-49 PLAY 0.4Vp-p (20μsec. div.)
IC302-8 PLAY 140mVp-p (20μsec. div.)
IC302-5 REC 1.0Vp-p (20μsec. div.)
IC302-82 REC 0.8Vp-p (20μsec. div.)
IC302-41 PLAY 0.4Vp-p (10μsec. div.)
IC302-34 REC 0.6Vp-p (20μsec. div.)
PP3001-4 REC/PLAY 2.4Vp-p (10msec. div.)
PP3002-9 REC/PLAY 2.5Vp-p (10msec. div.)
P501-9 REC 5.0Vp-p (10msec. div.)
IC302-79, 80 REC 0.6Vp-p (10μsec. div.)
IC302-79, 80 PLAY 0.4Vp-p (20μsec. div.)
TO SYSTEM CTL
FROM SYSTEM CTL
HEAD AMP C. B. A.
CNR PACK C. B. A.
LUMINANCE & CHROMINANCE PACK C. B. A.
MODE SELECT
IC851-⑱ MODE
H OFF
M SP
L LP
C.AMP
AGC
VR302
AMP
MUTE
CLP
DET
MAIN L. P. F
CHROMINANCE TRAP
NLDE
DOC
YNR
Q303 AMP
L. P. F
Q305 BUFFER
Y/C MIX
B. M
COMB AMP
LUMINANCE TRAP
MAIN B. P. F
BURST DOWN
ACC
ACC DET
B. GENE
PHASE SHIFT CTL
X2
KILLER
VCO
APC
VXO
1/4
SUB B. M
1/40
AFC
SIDE LOCK
F. DET
4.43MHz
PAL
MESECAM
REG 5V
PIC CONT
NC
LIM
H. P. F
AMP
L. P. F
HSS
DETAIL EMPHANSOF
NLE
630KHz B. P. F
627KHz
629KHz
630KHz
MAIN B. N
BURST UP
630KHz L. P. F
PHASE ROTATION
SUB L. P. F
FM DEM.
LIM
H. P. F
ENV. DET
VR303 PB Y
FM MODU
FM MODURATION
WHITE LEVEL
SYNC TIP
MAIN EMPHASIS
W/D CLIP
MAIN EMPH
FO VR501
DEV VR302
REG 5V
Q304 REG 5V
L. P. F
VSS
QR316
QR310
QR303
QR308
QR312
QR320
CONVERT/THROUGH
REC
REC C
REC Y
RF C
RF Y
AI
PICTURE CTL
ROTARY SW
MESECAM
PAL/NTSC
REC
REC C VR502
REC Y VR501
Q504 MIX
HEAD SW
ENV. SELECT
HEAD AMP SW
TRACKING ENV.
TL3301
Q3004 AMP
L3006, C3032 627KHz TRAP
Q3005 FREQUENCY COMPENSATOR
C3028
C3029
L3009
VR3011
VR3012
QR3002
QR3003
LP
SP


IN SIGNAL PATH IN REC MODE
MAIN SIGNAL PATH IN PLAYBACK MODE
IC501
HEAD AMP C. B. A.
REC C
REC Y
REC C VR502
REC Y VR501
Q504 MIX
AMP
P. B ON
REC ON
1ST & 2ND AMP
HEAD SW
H. A SW
ENV. SELECT
AGC DET
AGC AMP
CHROMA AMP
AT DET
Q502 Q503 AMP
RF Y
HEAD SW
ENV. SELECT
HEAD AMP SW
TRACKING ENV.
TO/FROM SYSTEM CTL
L'
COM
R'
L
R
SP-L'
SP-R'
LP-L
LP-R
627KHz TRAP
Q3005 FREQUENCY COMPENSATOR
L3003
LP Q VR3013
SP Q VR3012
QR3002
QR3003
LP
SP

SECTION 4
SCHEMATIC DIAGRAMS
4-1 POWER SUPPLY SECTION IN MAIN SCHEMATIC DIAGRAM



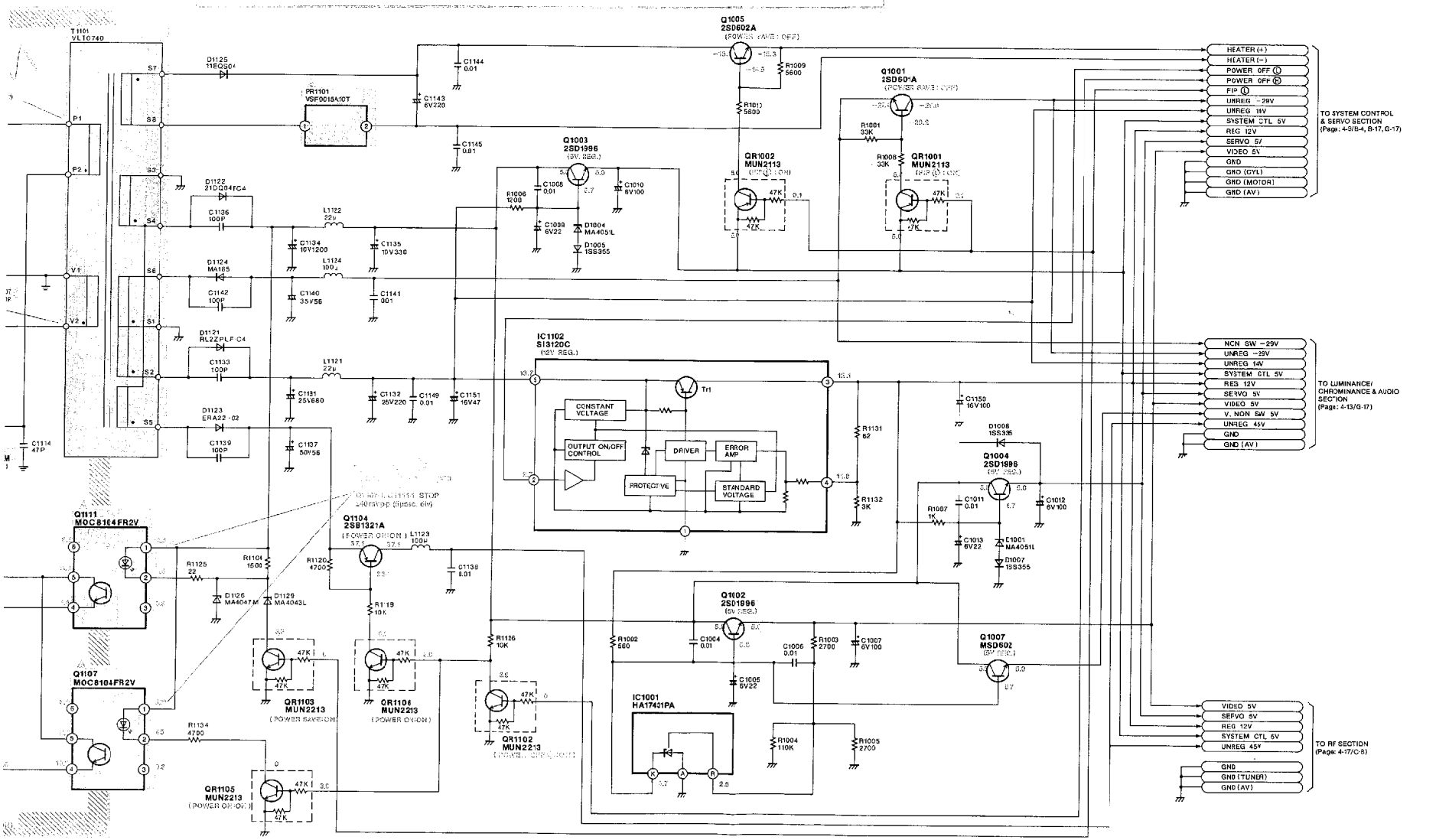
IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

NOTE 1. WHEN MEASURE THE VOLTAGE OR WAVEFORM ON THE POWER TRANSFORMER CIRCUIT, SET THE GND TERMINAL OF MEASURING POINT AS FOLLOWS.
PRIMARY SIDE ..... ⏚
SECONDARY SIDE ... ⏚

NOTE 2. THE DC VOLTAGE INDICATED IN INPUT AC IS 240 V.

CAUTION: FOR HOT CHASSIS, THE HOT GROUND IS ISOLATED FROM THE SECONDARY GROUND. PAY ATTENTION NOT TO RECEIVE AN ELECTRIC SHOCK DURING REPAIR AND SERVICE OF THE PRODUCTION.

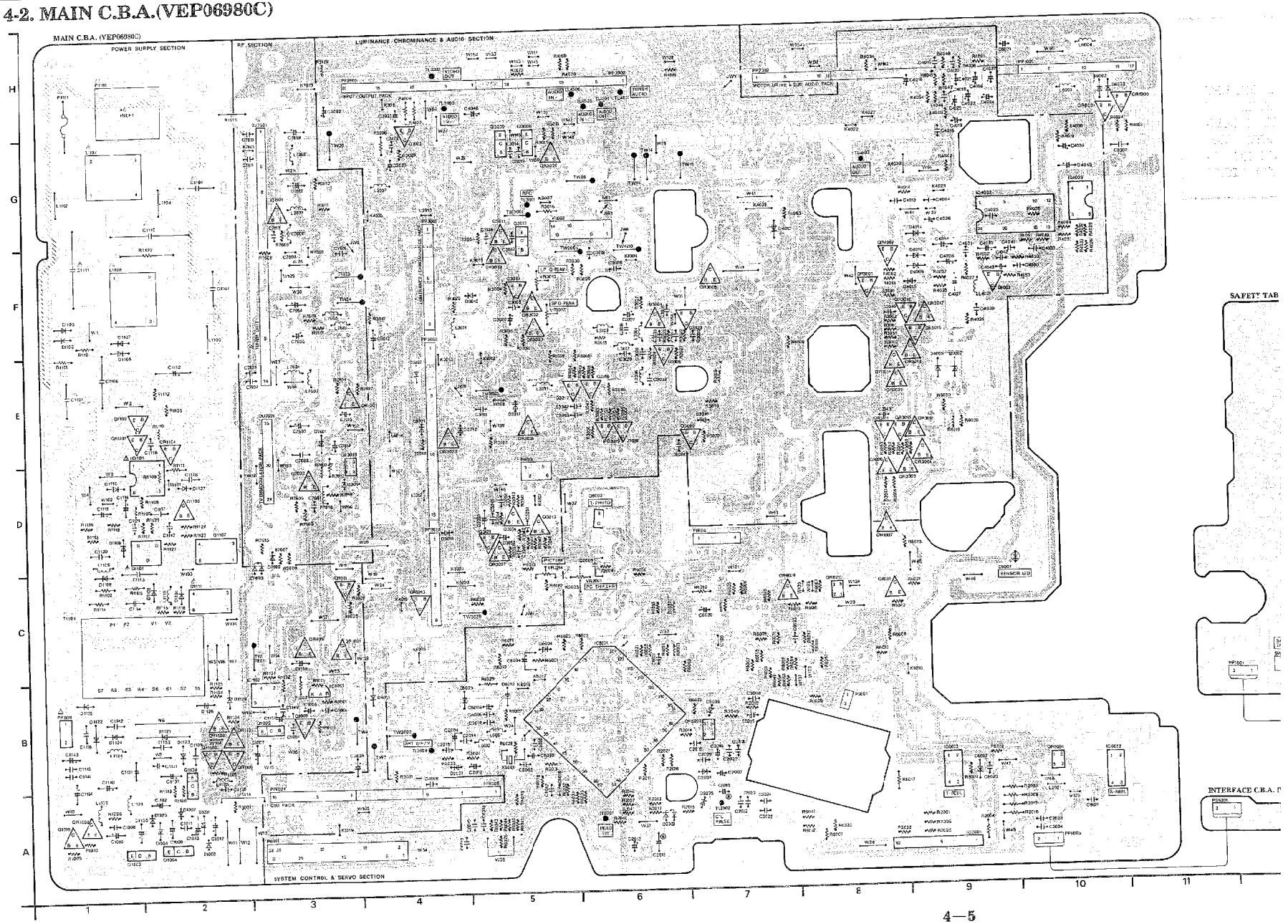


NOTE 1. WHEN MEASURE THE VOLTAGE OR WAVEFORM ON THE POWER TRANSFORMER CIRCUIT, SET THE GND TERMINAL OF MEASURING POINT AS FOLLOWS. PRIMARY SIDE ⏚ SECONDARY SIDE ⏚

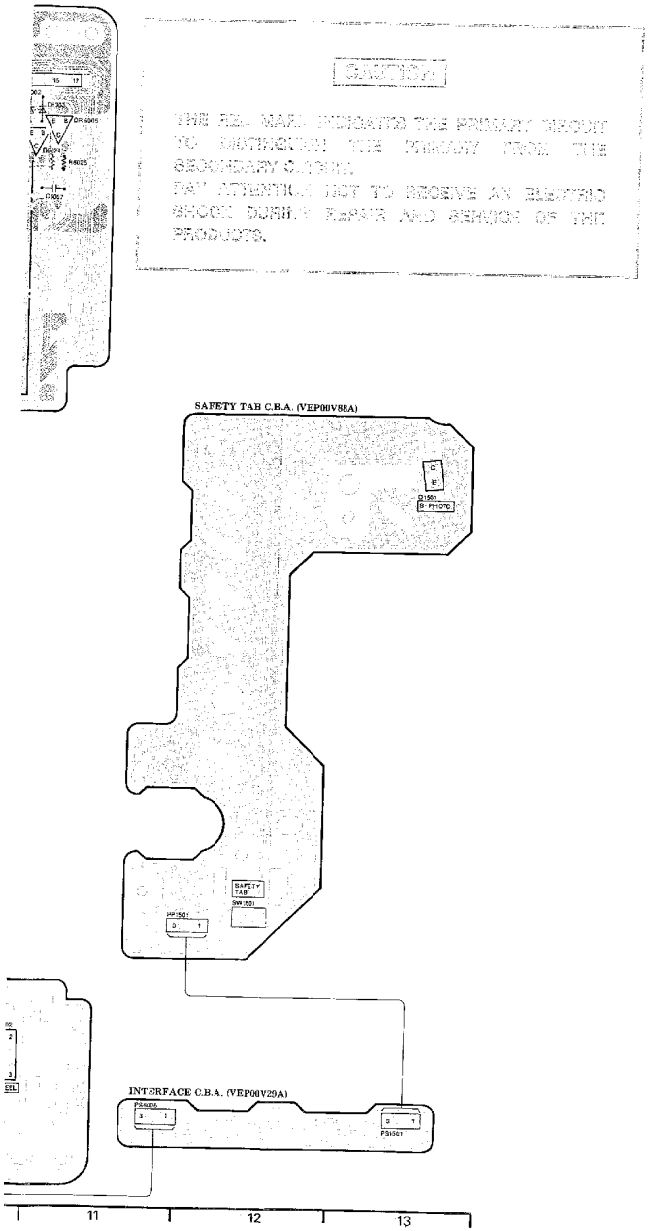
NOTE 2. THE DC VOLTAGE INDICATED IN PRIMARY SIDE IS SHOWN THE VOLTAGE WHEN INPUT AC IS 240V.

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

4-2. MAIN C.B.A.(VEP06980C)



MAIN C B A ADDRESS INFORMATION



POWER SUPPLY SECTION	
Transistor	
Q1001	C-3
Q1002	B-3
Q1003	A-1
Q1004	A-2
Q1005	A-1
Q1007	B-3
Q1101	D-2
Q1102	E-1
Q1104	B-2
Q1105	D-2
Q1107	D-2
Q1111	C-2
Transistor & Resistor	
QR1001	C-3
QR1002	A-1
QR1101	E-1
QR1102	B-2
QR1103	B-2
QR1104	E-2
QR1105	B-2
QR1106	B-2
Integrated Circuit	
IC1001	B-3
IC1101	D-2
IC1102	B-3

ADDRESS INFORMATION

SYSTEM CONTROL & SERVO SECTION	
Transistor	
Q1501	E-13
Q6001	C-8
Q6002	D-6
Transistor & Resistor	
QR6001	B-10
QR6002	B-7
QR6004	H-10
QR6005	H-11
QR6009	C-7
QR6010	C-8
QR6012	C-3
QR6013	C-4
Integrated Circuit	
IC2001	A-8
IC6001	C-6
IC6002	B-10
IC6003	B-9
Test Point	
TL2001	A-6
TL2002	A-7
TL2009	B-4
TW7	B-4
TW2001	F-6
TW2002	B-4
Adjustment	
VR2001	C-6
Connector	
P2001	B-8
P6001	A-3
P6004	D-7
PP1501	B-12
PP2001	H-10
PP2002	H-7
PP6005	A-10
PS1501	A-13
PS6005	A-11

ADDRESS INFORMATION

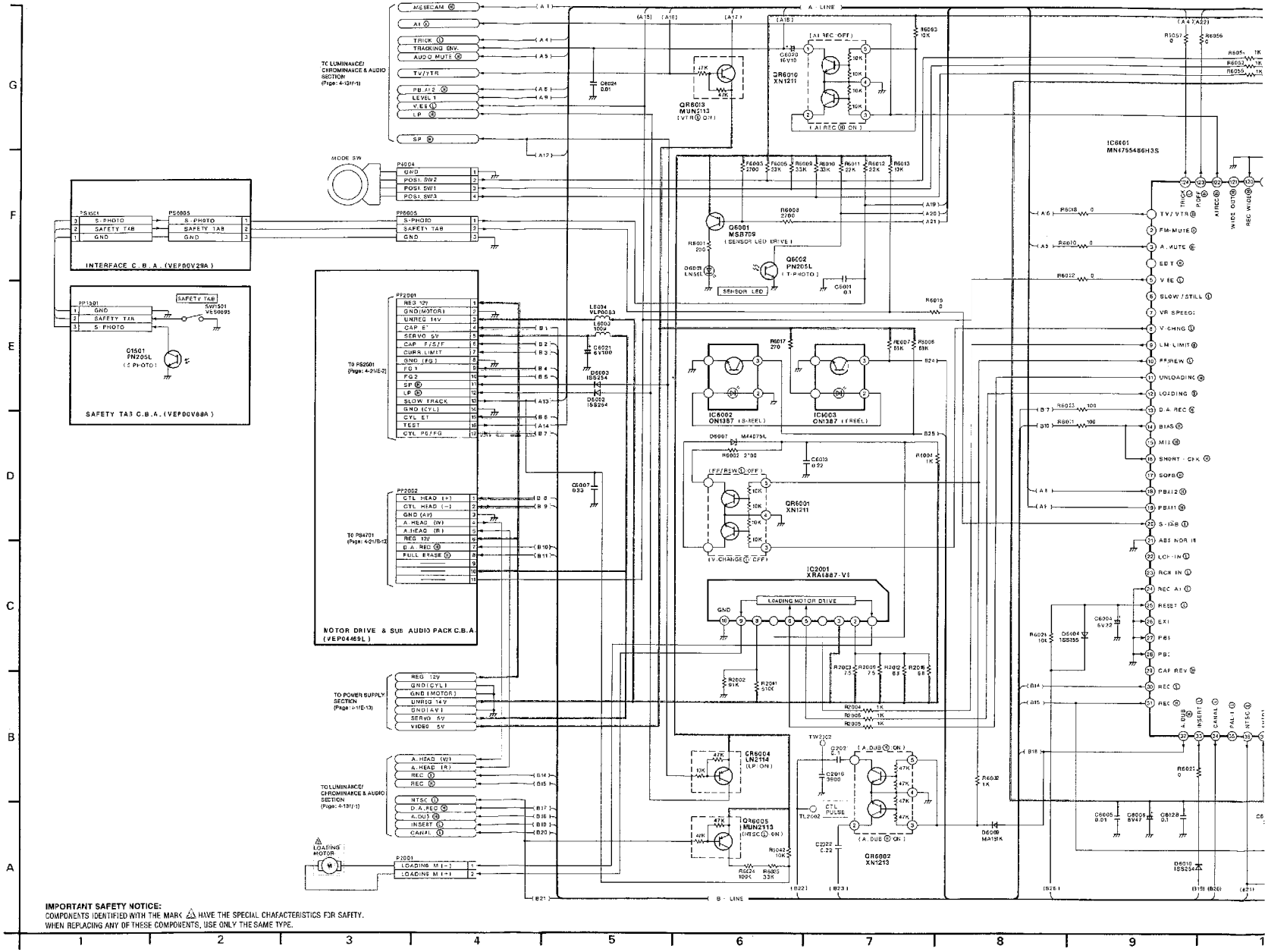
RF SECTION	
Transistor	
Q7601	G-3
Q7602	D-3
Transistor & Resistor	
QR7601	E-4
Test Point	
TW23	F-3
TW24	F-3
TW30	G-3
TW7601	C-3
Connector	
DU7601	E-3
DU7601	G-3

ADDRESS INFORMATION

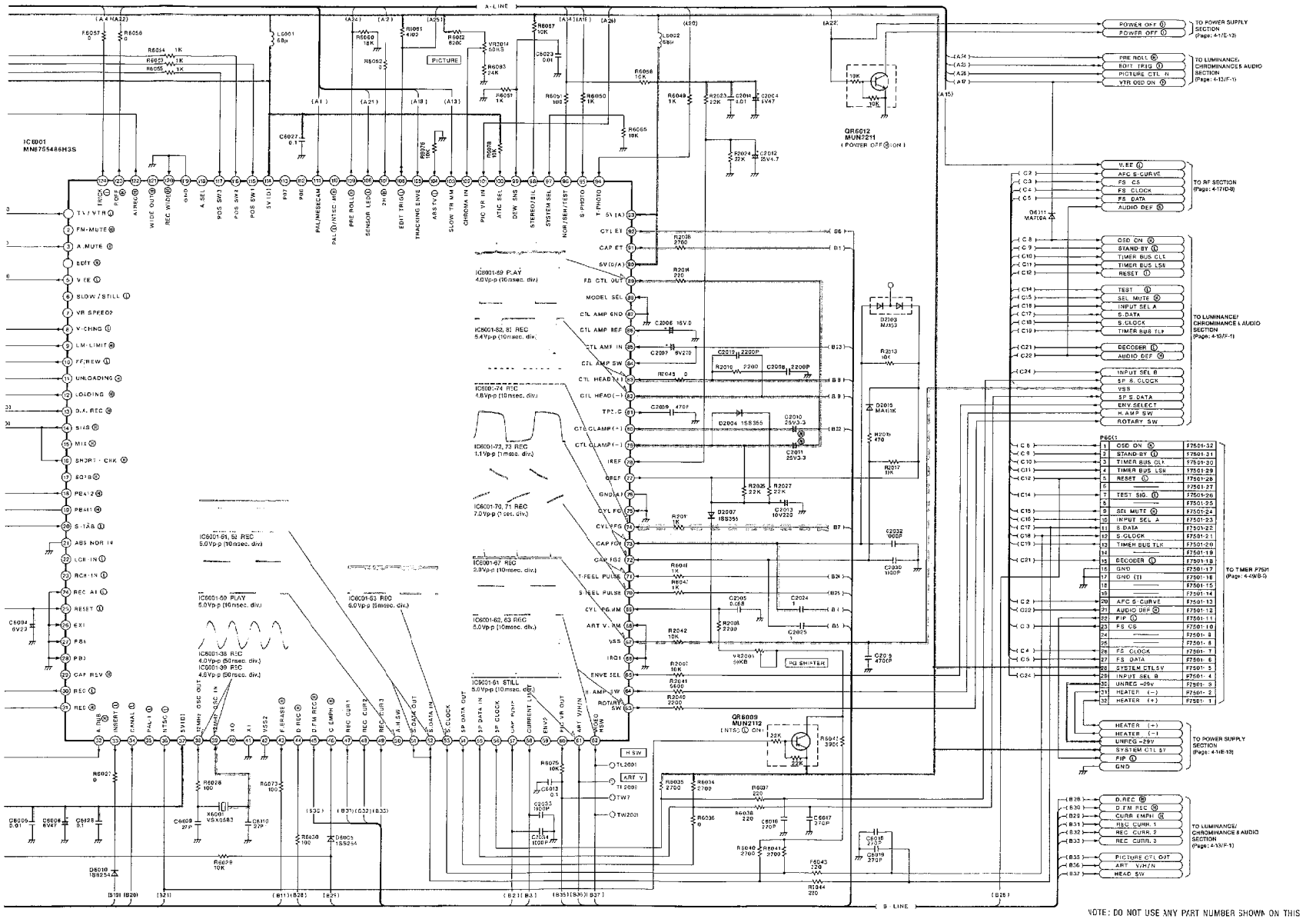
LUMINANCE/CHROMINANCE & AUDIO SECTION	
Transistor	
Q3002	E-7
Q3003	G-4
Q3004	F-6
Q3005	E-6
Q3008	G-5
Q3009	G-5
Q3010	F-5
Q3011	G-5
Q3012	G-5
Q3013	D-5
Q3014	D-5
Q3016	E-6
Q3017	E-5
Q3018	E-6
Q3019	E-6
Q3020	D-8
Q3021	D-5
Q3023	F-7
Q4001	F-9
Transistor & Resistor	
QR3001	F-8
QR3002	F-5
QR3003	F-5
QR3005	F-7
QR3007	D-8
QR3008	D-9
QR3009	D-9
QR3010	E-9
QR3011	E-8
QR3012	E-9
QR3013	E-9
QR3014	E-8
QR3015	F-9
QR3016	F-9
QR3017	F-9
QR3018	F-5
QR3019	D-3
QR3020	G-5
QR3021	E-8
QR3023	E-4
QR3026	E-5
QR3027	D-5
QR4007	F-8
Integrated Circuit	
IC4002	G-9
IC4003	G-10
Test Point	
TL3001	G-5
TL3002	H-4
TL3003	H-4
TL4503	G-3
TL4504	H-3
TL4505	H-3
TL4506	H-6
TL4521	H-6
TW4	B-3
TW14	G-6
TW15	G-6
TW19	G-7
TW28	G-6
TW3001	G-5
TW3025	E-5
TW3026	C-5
TW4510	F-6
Adjustment	
VR3012	F-5
VR3013	F-5
VR3014	C-5
Connector	
F3002	G-5
F4001	D-5
FP3001	G-4
FP3002	E-4
FP3003	D-4
FP3901	H-4
FP3902	H-6
FP4004	A-3
FP4005	A-5

ADDRESS INFORMATION

4-3. SYSTEM CONTROL & SERVO SECTION IN MAIN SCHEMATIC DIAGRAM



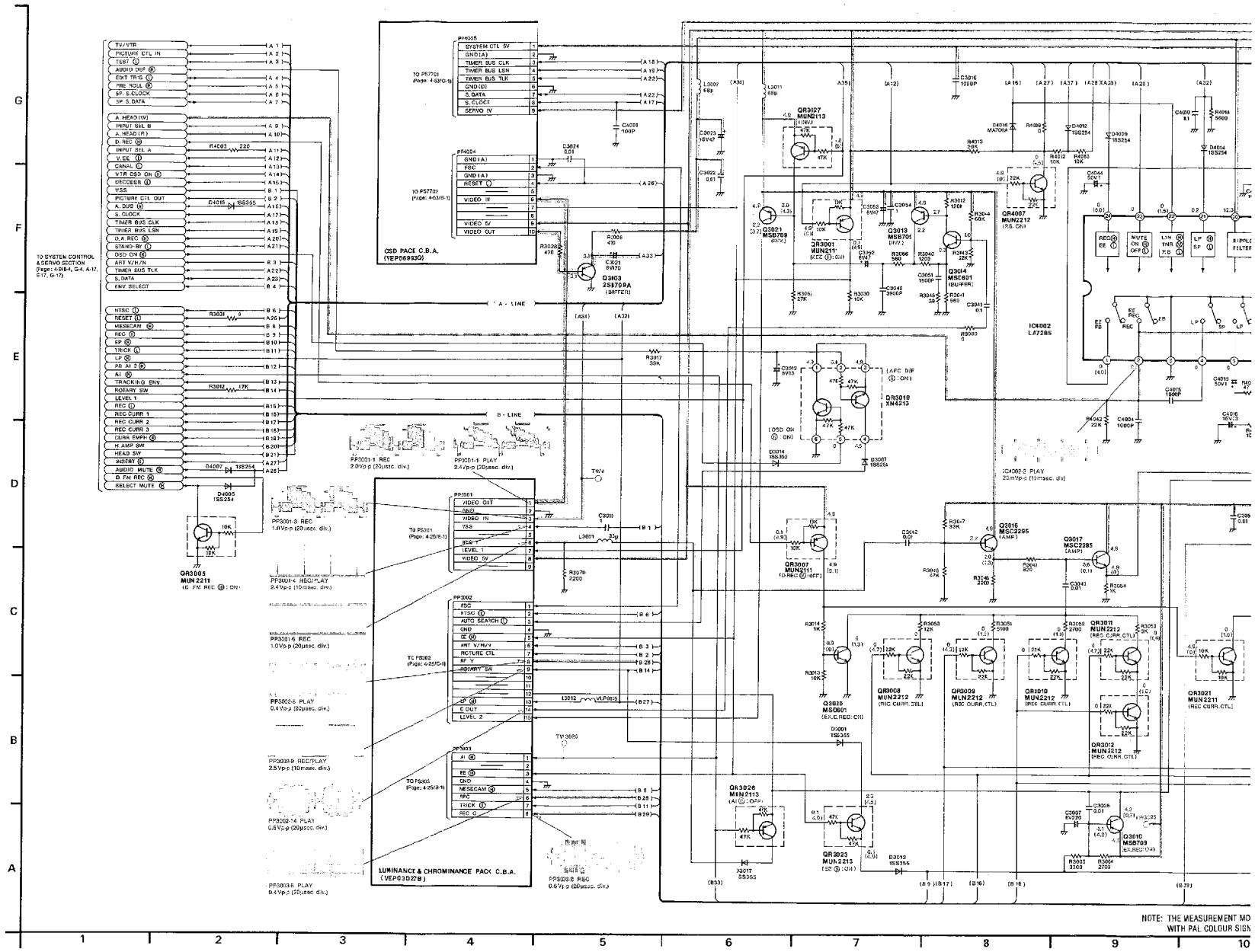
CAPSTAN SERVO SPEED LOOP CAPSTAN SERVO PHASE LOOP CYLINDER SERVO SPEED LOOP CYLINDER SERVO PHASE LOOP


IC6001 MNE765486H3S
QR6012 MUN2211 (POWER OFF●/ON)
QR6009 MUN2112 (NTSC ● ON)
IC6001-69 PLAY 4.0Vp-p (10msec. div.)
IC6001-52, 81 REC 5.4Vp-p (10msec. div.)
IC6001-74 REC 4.6Vp-p (10msec. div.)
IC6001-72, 73 REC 1.1Vp-p (1msec. div.)
IC6001-70, 71 REC 7.0Vp-p (1 sec. div.)
IC6001-67 REC 2.8Vp-p (10msec. div.)
IC6001-62, 63 REC 5.0Vp-p (10msec. div.)
IC6001-61 STILL 5.0Vp-p (10msec. div.)
IC6001-60 PLAY 5.0Vp-p (10msec. div.)
IC6001-53 REC 5.0Vp-p (5msec. div.)
IC6001-38 REC 4.0Vp-p (50msec. div.)
IC6001-39 REC 4.6Vp-p (50msec. div.)
IC6001-91, 92 REC 5.0Vp-p (10msec. div.)
PICTURE
H SW
ART V
TO POWER SUPPLY SECTION (Page: 4-17/E-13)
TO LUMINANCE, CHROMINANCE& AUDIO SECTION (Page: 4-13/F-1)
TO RF SECTION (Page: 4-17/D-8)
TO LUMINANCE/ CHROMINANCE & AUDIO SECTION (Page: 4-13/F-1)
TO TIMER P7501 (Page: 4-19/B-5)
TO POWER SUPPLY SECTION (Page: 4-18/E-13)
TO LUMINANCE/ CHROMINANCE & AUDIO SECTION (Page: 4-13/F-1)
P6501
P7501
A-LINE
B-LINE

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PAR", PLEASE REFER TO PARTS LIST.

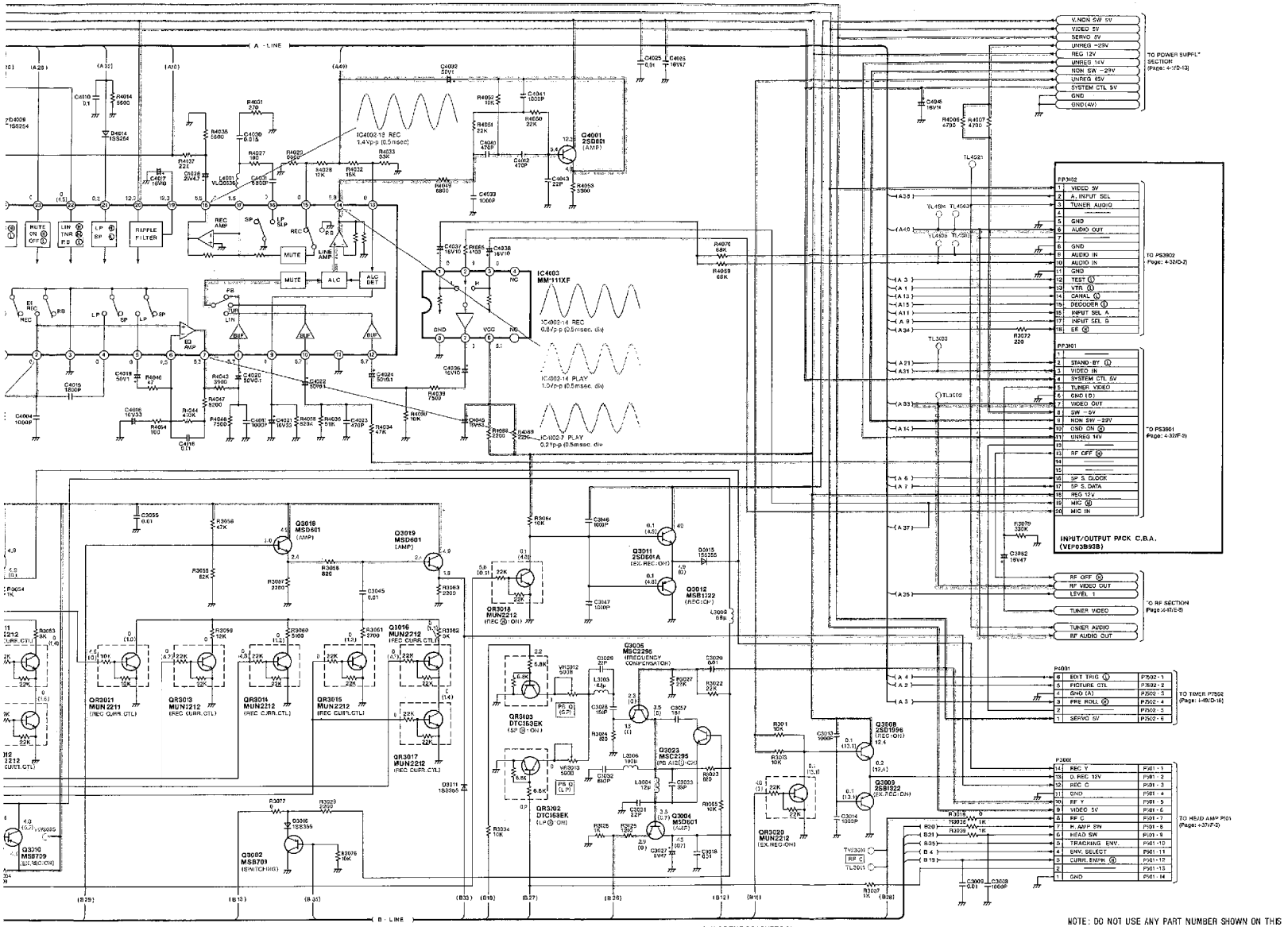
9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18

4-4. LUMINANCE/CHROMINANCE & AUDIO SECTION IN MAIN SCHEMATIC DIAGRAM



VIDEO MAIN SIGNAL PATH IN REC MODE
VIDEO MAIN SIGNAL PATH IN PLAYBACK MODE

AUDIO MAIN SIGNAL PATH IN REC MODE
AUDIO MAIN SIGNAL PATH IN PLAYBACK MODE



NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE WITH PAL COLOUR SIGNAL. (SP MODE)

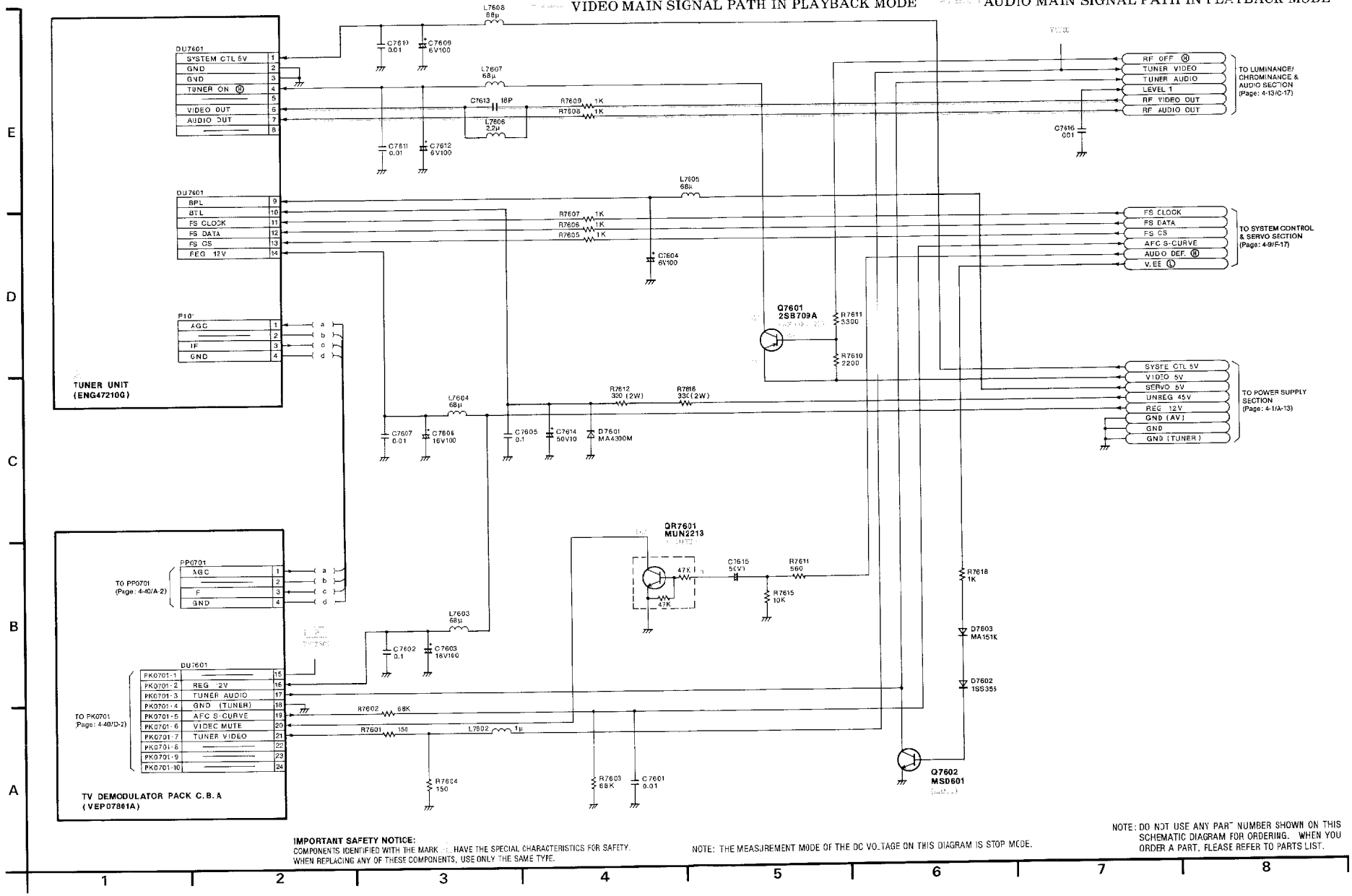
THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL. (SP MODE)

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

9 10 11 12 13 14 15 16 17 18

4-5. RF SECTION IN MAIN SCHEMATIC DIAGRAM

VIDEO MAIN SIGNAL PATH IN REC MODE
VIDEO MAIN SIGNAL PATH IN PLAYBACK MODE
AUDIO MAIN SIGNAL PATH IN REC MODE
AUDIO MAIN SIGNAL PATH IN PLAYBACK MODE



IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.

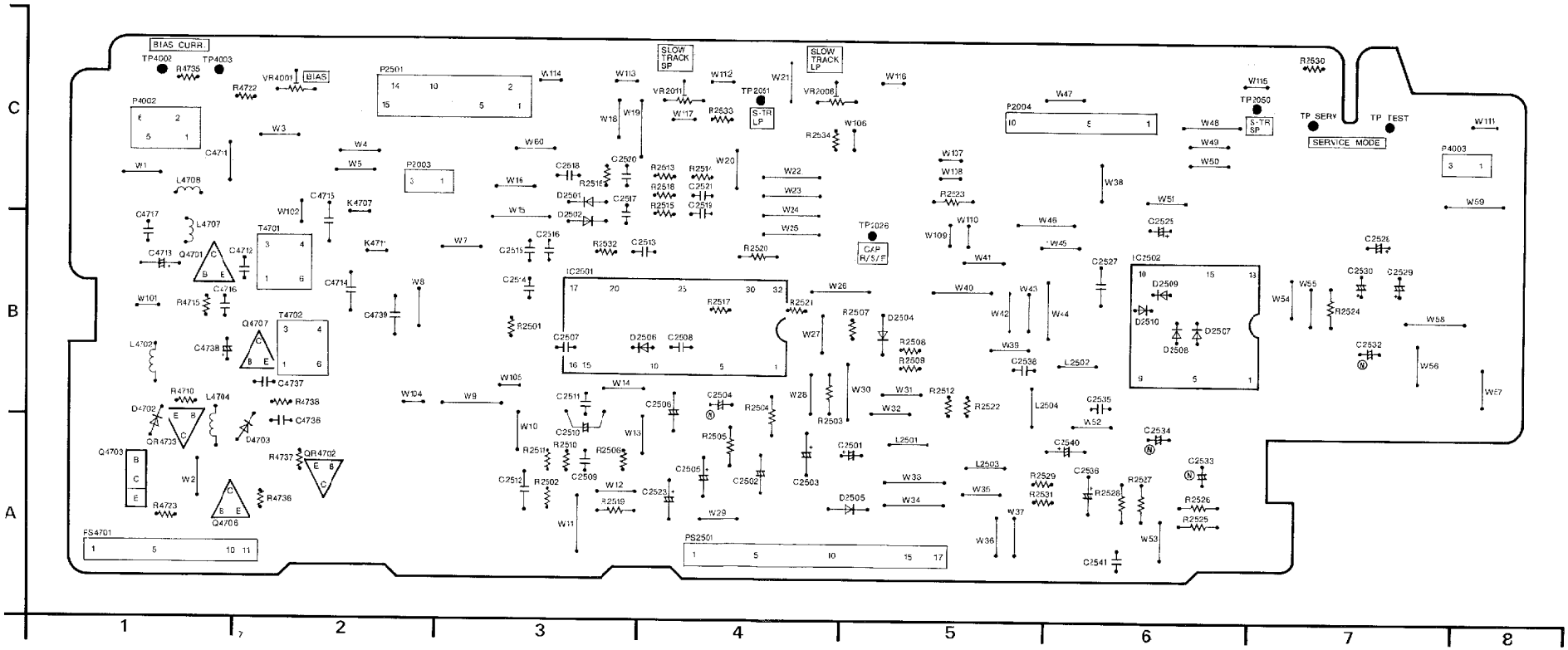
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

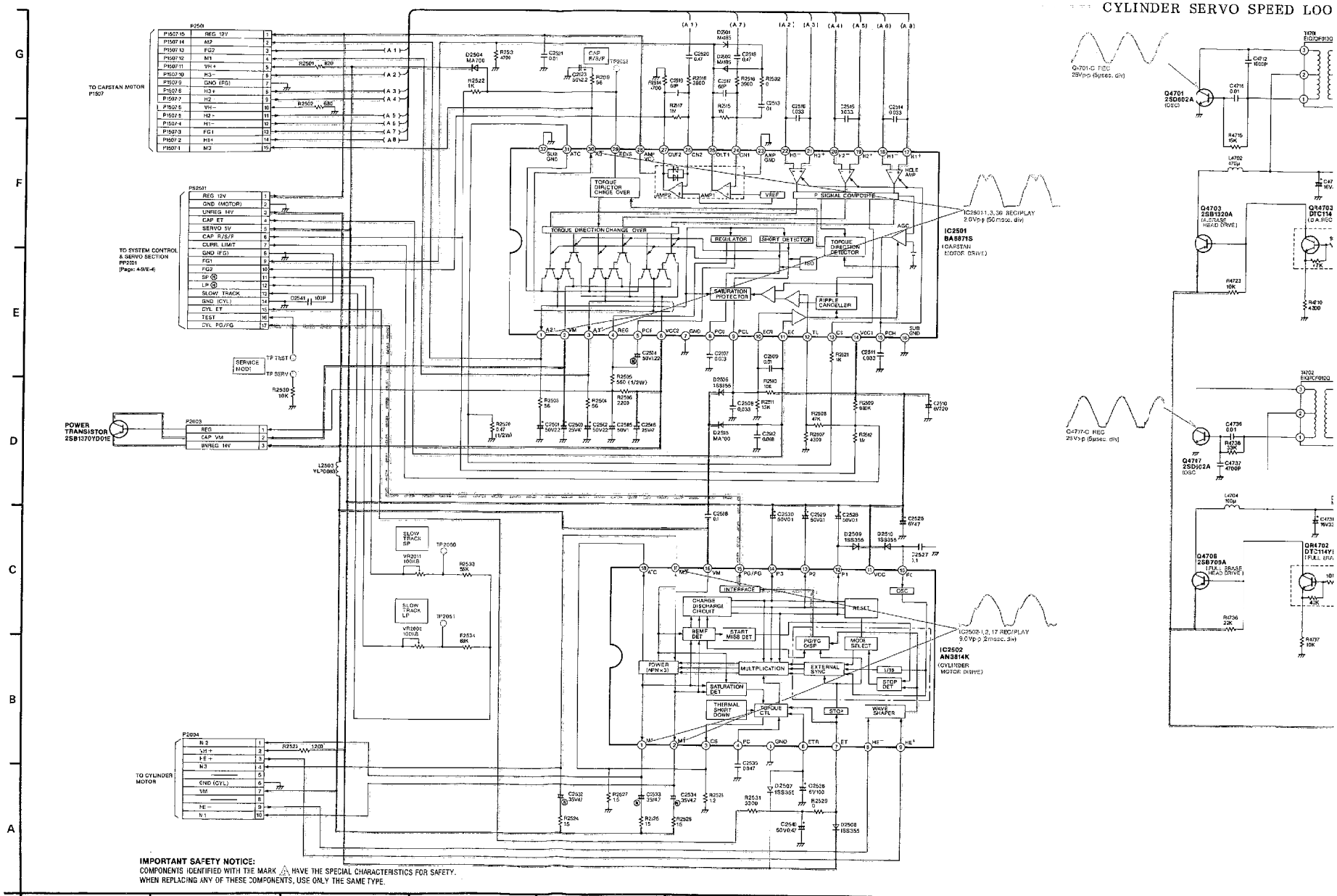
4-6. MOTOR DRIVE & SUB AUDIO PACK C.B.A.(VEP04469L)

MOTOR DRIVE & SUB AUDIO PACK C.B.A.			
Transistor		**Adjustment**	
Q4701	B-1	VR2006	C-4
Q4703	A-1	VR2011	C-4
Q4706	A-1	VR4001	C-2
Q4707	B-2	**Connector**	
Transistor & Resistor		P2003	C-2
QR4702	A-2	P2004	C-5
QR4703	A-1	P2501	C-2
Integrated Circuit		P4002	C-1
IC2501	B-3	P4003	C-7
IC2502	B-6	PS2501	A-4
Test Point		PS4701	A-1
TP2026	B-5		
TP2050	C-7		
TP2051	C-4		
TP4002	C-1		
TP4003	C-1		
TP SERV	C-7		
TP TEST	C-7		

ADDRESS INFORMATION

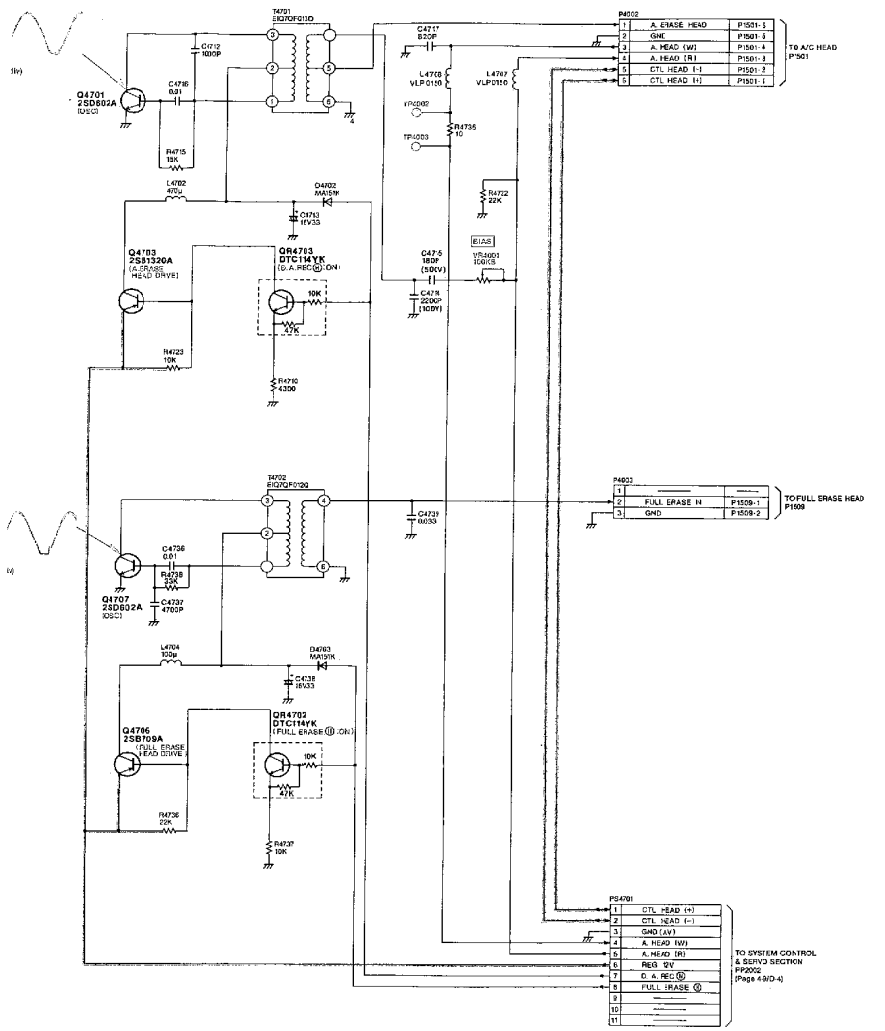


4-7. MOTOR DRIVE & SUB AUDIO PACK SCHEMATIC DIAGRAM



APSTAN SERVO SPEED LOOP　　CAPSTAN SERVO PHASE LOOP

CYLINDER SERVO SPEED LOOP　　CYLINDER SERVO PHASE LOOP



NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

9　10　11　13

MOTOR DRIVE & SUB AUDIO PACK ICs DC VOLTAGE CHART (SP MODE)

REF. NO.	IC2501																		
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	0.6	4.4	0.6	13.2	0.1	13.9	0	4.5	0.7	2.3	0.2	0.4	0	4.9	1.5	0	2.3	2.3	2.3	2.2
PLAY	2.6	4.3	2.6	12.4	1.9	13.6	0	0.7	0.7	2.3	2.5	0.4	0.1	4.9	1.5	0	2.3	2.3	2.3	2.3
REC	2.7	4.3	2.7	12.4	2.0	13.6	0	0.7	0.7	2.3	2.5	0.4	0.1	5.0	1.5	0	2.3	2.3	2.3	2.3
F.F	7.5	13.4	7.5	4.3	11.6	13.5	0.1	0.8	0.8	2.3	2.0	0.5	0.2	4.9	1.5	0	2.3	2.3	2.3	2.3
REW	7.0	13.5	7.0	6.9	1.7	13.6	0	0.7	0.8	2.3	2.3	0.5	0.1	4.9	1.5	0	2.3	2.3	2.3	2.3

REF. NO.	IC2501																		
MODE	21	22	23	24	25	26	27	28	29	30	31	32							
STOP	2.2	2.3	0	6.3	5.3	6.3	6.3	12.3	2.0	0.6	0	0							
PLAY	2.3	2.3	0	6.3	5.3	6.3	6.3	12.3	0	2.6	0	0							
REC	2.3	2.3	0	6.3	5.3	6.3	6.3	12.3	0	2.6	0.1	0							
F.F	2.3	2.3	0	6.3	5.3	6.3	6.3	12.3	0	7.5	0.2	0							
REW	2.3	2.3	0	6.3	5.3	6.3	6.3	12.3	4.9	7.4	0.2	0							

REF. NO.	IC2502																	
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
STOP	13.1	13.1	0.1	0.6	0	2.5	2.4	1.1	1.0	2.6	4.9	3.7	3.6	3.7	1.1	13.8	13.3	0.1
PLAY	13.8	12.8	0.2	0.6	0	2.5	2.4	1.1	1.0	2.7	4.9	3.7	3.7	3.7	1.1	13.6	13.7	0.2
REC	13.7	13.7	0.2	0.6	0	2.5	2.4	1.1	1.0	2.7	4.9	3.8	3.7	3.7	1.1	13.6	13.7	0.2
F.F	13.8	13.8	0.1	0.6	0	2.5	2.4	1.1	1.0	2.7	4.9	3.8	3.7	3.7	1.1	13.5	13.7	0.1
REW	13.8	13.8	0.2	0.6	0	2.5	2.4	1.1	1.0	2.7	4.9	3.7	3.7	3.7	1.1	13.5	13.7	0.2

MOTOR DRIVE & SUB AUDIO PACK PINs DC VOLTAGE CHART (SP MODE)

REF. NO.	PS2501																		
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17		
STOP	12.3	0	13.8	0.2	4.9	2.0	4.9	0	6.3	6.3	4.4	0	0	0	2.4	5.0	1.1		
PLAY	12.3	0	13.6	2.5	4.9	0	4.9	0	6.3	6.3	4.4	0	0	0	2.4	4.9	1.1		
REC	12.3	0	13.6	2.5	4.9	0	4.9	0	6.3	6.3	4.4	0	0	0	2.4	4.9	1.1		
F.F	12.3	0	13.5	2.1	4.9	0	4.9	0	6.3	6.3	4.4	0	0	0	2.4	4.9	1.1		
REW	12.3	0	13.5	2.1	4.9	4.9	4.9	0	6.3	6.3	4.4	0	0	0	2.4	4.9	1.1		

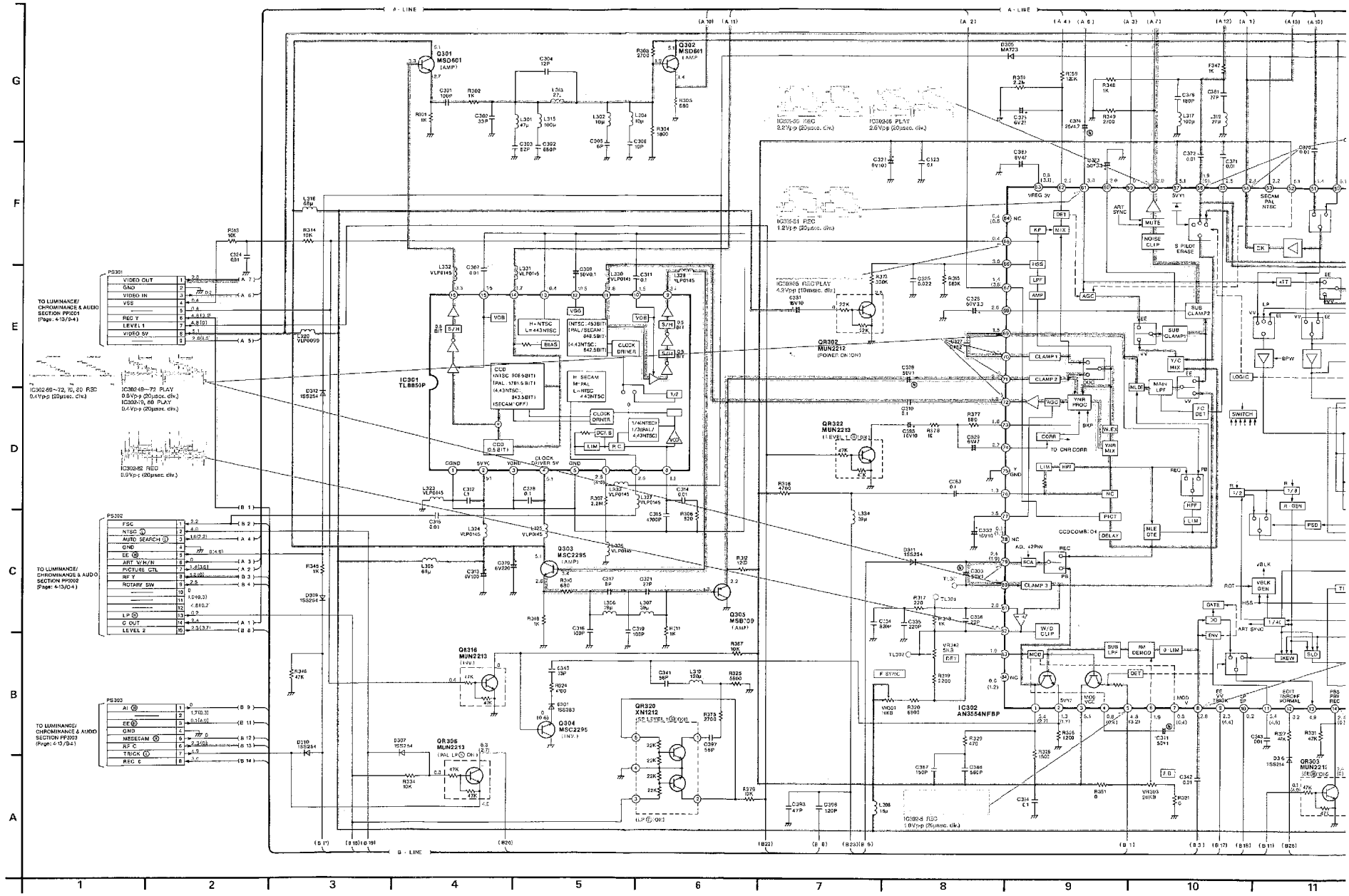
REF. NO.	PS4701																		
MODE	1	2	3	4	5	6	7	8	9	10	11								
STOP	0	0	0	0	0	12.3	0	0	0	4.9	0								
PLAY	0	0	0	0	0	12.3	0	0	0	0	4.9								
REC	3.5	3.5	0	0	0	12.3	4.9	4.7	0	4.9	0								
F.F	0	0	0	0	0	12.3	0	0	0	4.9	0								
REW	0	0	0	0	0	12.3	0	0	0	4.9	0								

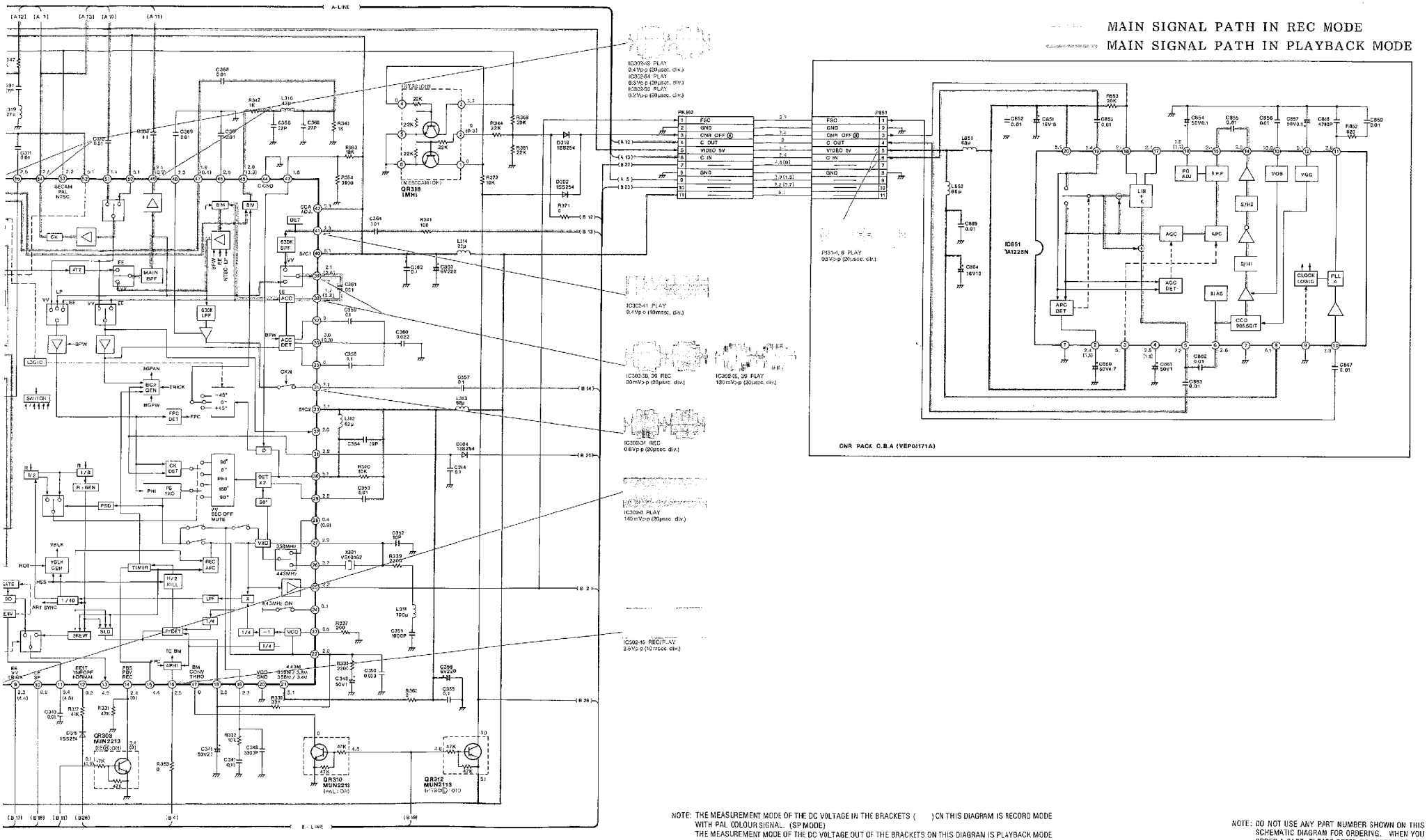
MOTOR DRIVE & SUB AUDIO PACK TR.s DC VOLTAGE CHART (SP MODE)

REF. NO.	Q4701			Q4703			Q4706			Q4707								
MODE	E	C	B	E	C	B	E	C	B	E	C	B						
STOP	0	0.2	0.2	12.3	0.3	12.3	12.5	0.4	12.5	0	0.4	0.3						
PLAY	0	0.3	0.3	12.3	0.3	12.3	12.5	0.4	12.5	0	0.4	0.3						
REC	0	11.3	−1.4	12.3	11.9	11.9	12.5	12.5	11.7	0	12.2	0						
F.F	0	0.3	0.3	12.3	0.3	12.3	12.5	0.4	12.5	0	0.4	0.3						
REW	0	0.3	0.3	12.3	0.3	12.3	12.5	0.4	12.5	0	0.4	0.3						

REF. NO.	QR4702			QR1703														
MODE	E	C	B	E	C	B												
STOP	0	12.5	0	0	12.3	0												
PLAY	0	12.5	0	0	12.3	0												
REC	3.6	11.7	4.7	4.1	11.5	4.9												
F.F	0	12.5	0	0	12.3	0												
REW	0	12.5	0	0	12.3	0												

4-8. LUMINANCE & CHROMINANCE PACK SCHEMATIC DIAGRAM

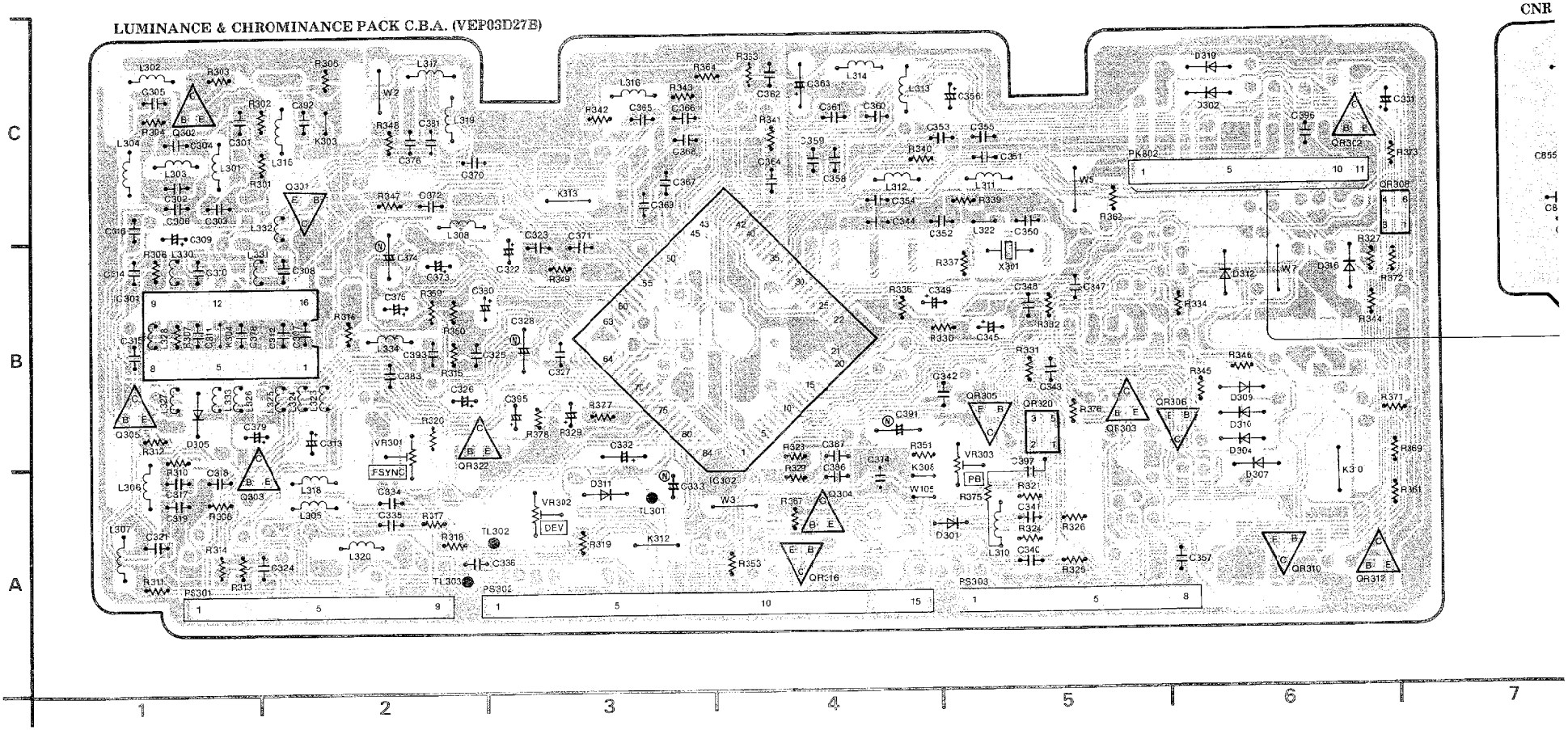




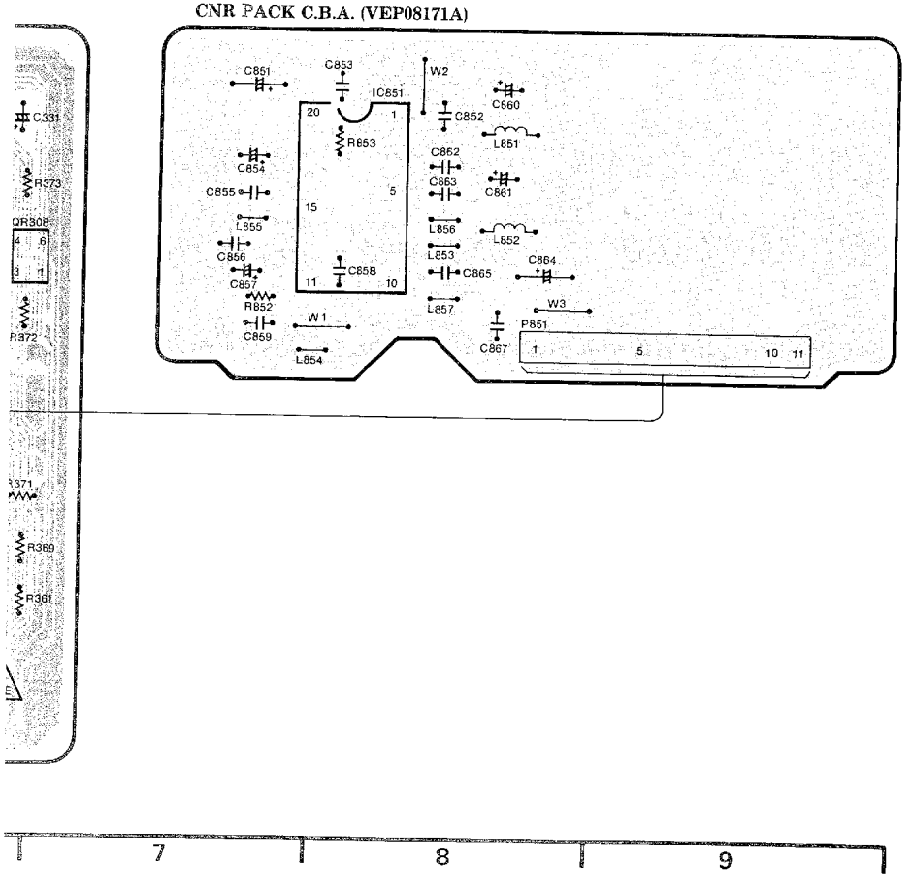
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE WITH PAL COLOUR SIGNAL. (SP MODE)
THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL. (SP MODE)

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

4-9. LUMINANCE & CHROMINANCE PACK C.B.A.(VEP03D27B)



CNR PACK C.B.A. (VEP08171A)

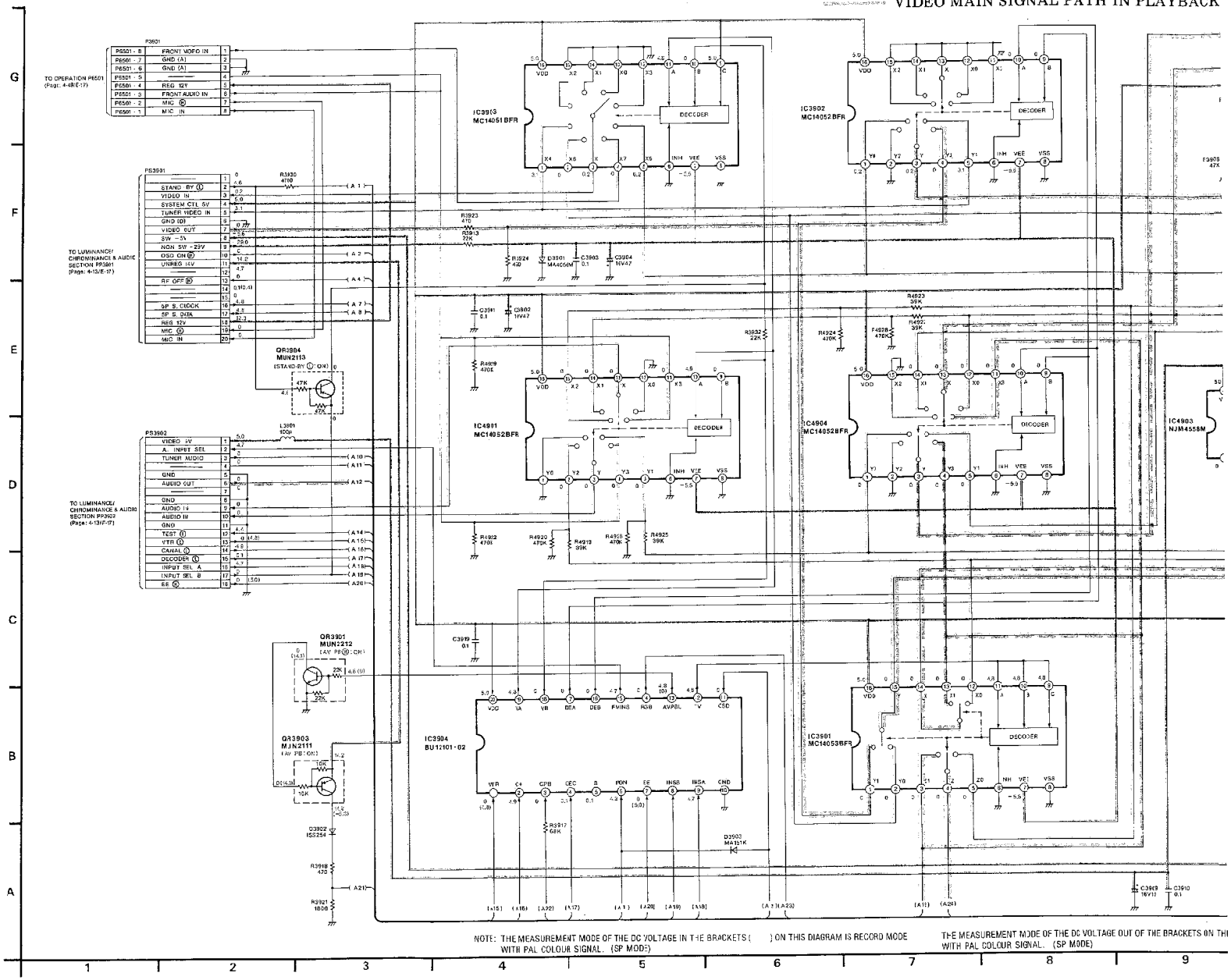


LUMINANCE & CHROMINANCE PACK C.B.A.	
Transistor	
Q301	C-2
Q302	C-1
Q303	A-1
Q304	A-4
Q305	B-1
Transistor & Resistor	
QR302	C-6
QR303	B-5
QR305	B-5
QR306	B-6
QR308	C-6
QR310	A-6
QR312	A-6
QR316	A-4
QR320	B-5
QR322	B-2
Integrated Circuit	
IC301	B-1
IC302	B-4
IC851	C-8
Test Point	
TL301	A-3
TL302	A-3
TL303	A-2
Adjustment	
VR301	B-2
VR302	A-3
VR303	B-5
Connector	
P651	B-9
PK802	C-5
PS301	A-1
PS302	A-3
PS303	A-5

ADDRESS INFORMATION

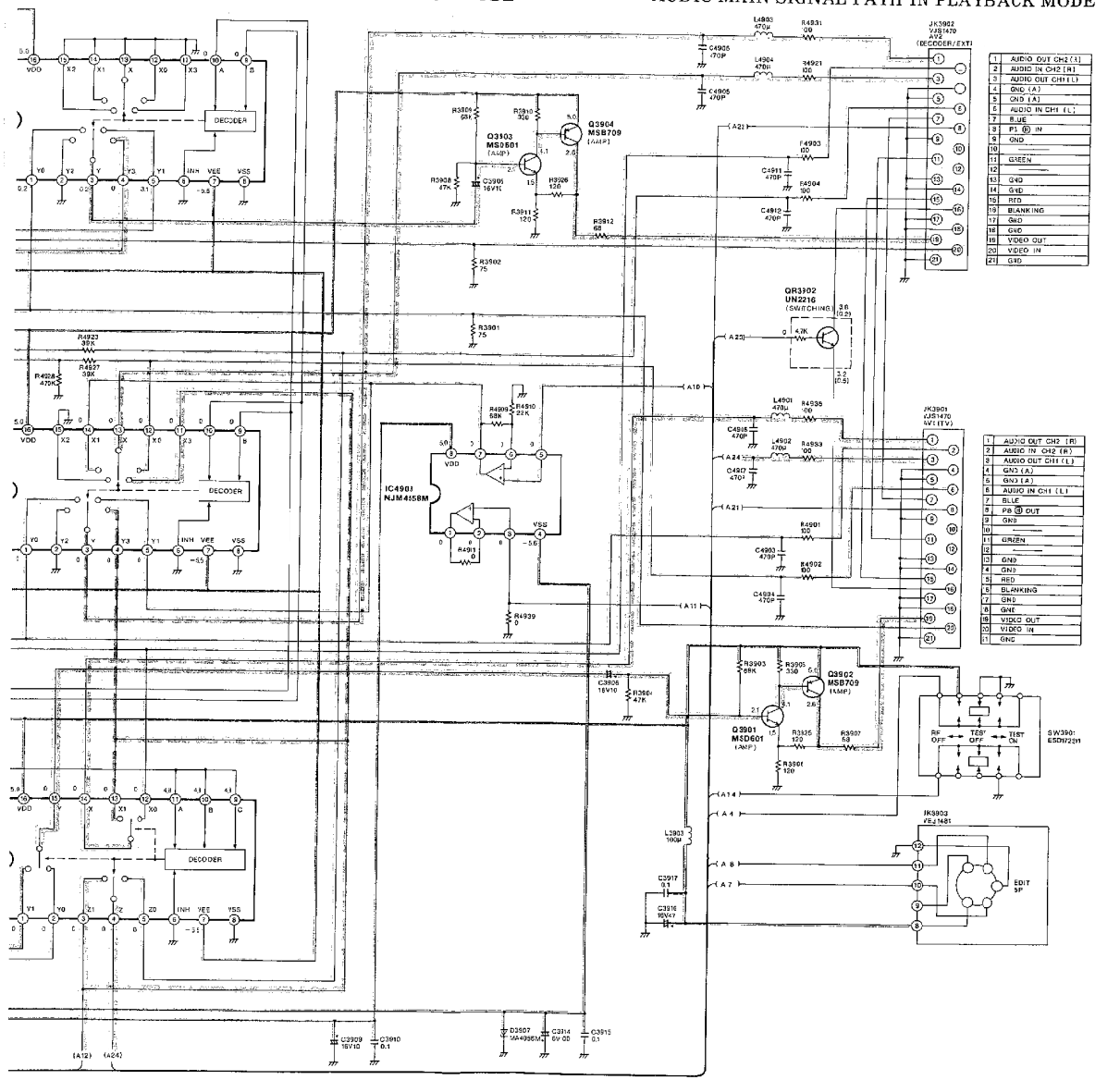
4-10. INPUT/OUTPUT PACK SCHEMATIC DIAGRAM

VIDEO MAIN SIGNAL PATH IN REC MODE
VIDEO MAIN SIGNAL PATH IN PLAYBACK



VIDEO MAIN SIGNAL PATH IN REC MODE
VIDEO MAIN SIGNAL PATH IN PLAYBACK MODE

AUDIO MAIN SIGNAL PATH IN REC MODE
AUDIO MAIN SIGNAL PATH IN PLAYBACK MODE



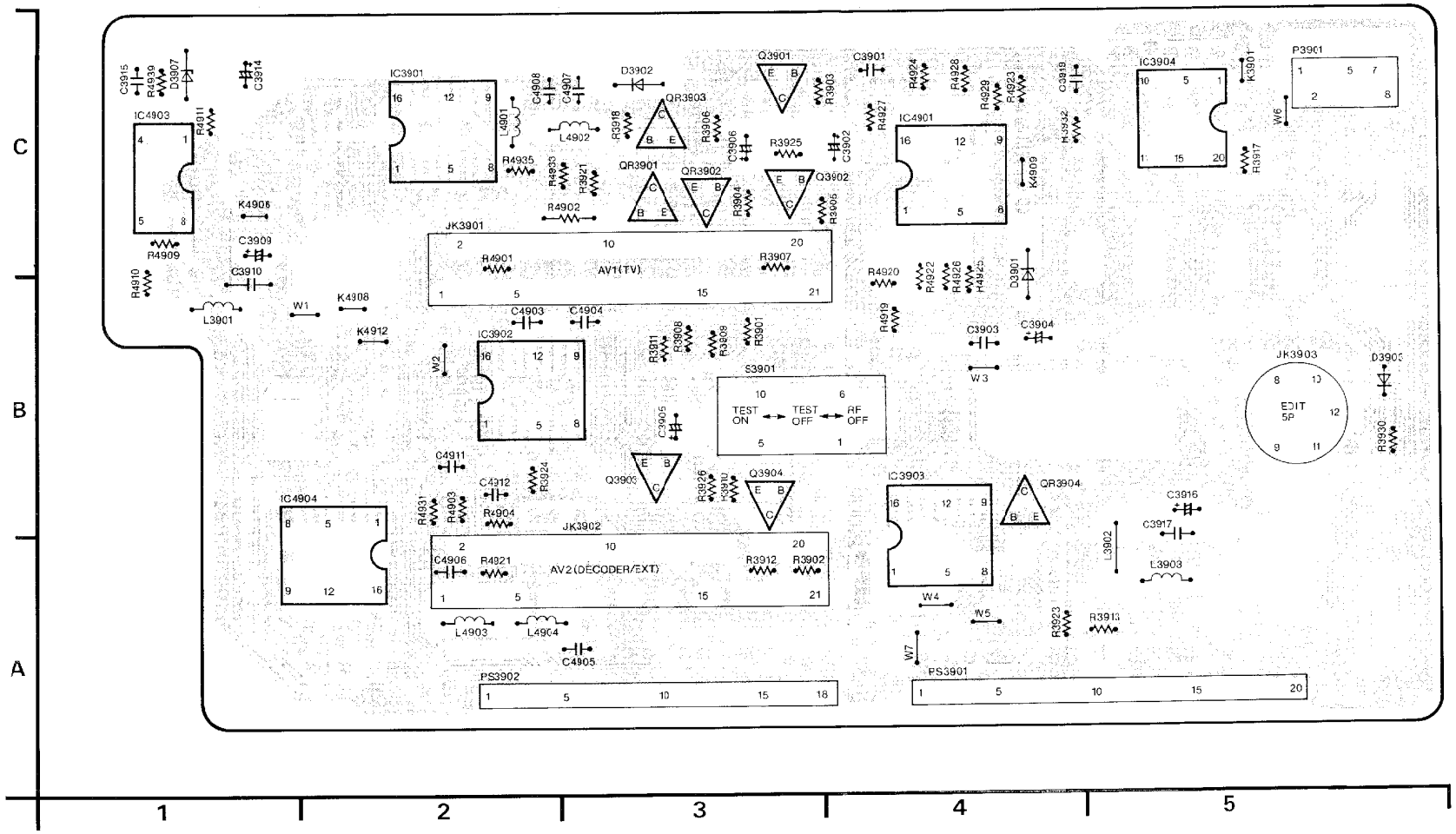
ECORD MODE

THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL. (SP MODE)

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

7 | 8 | 9 | 10 | 11 | 12 | 13

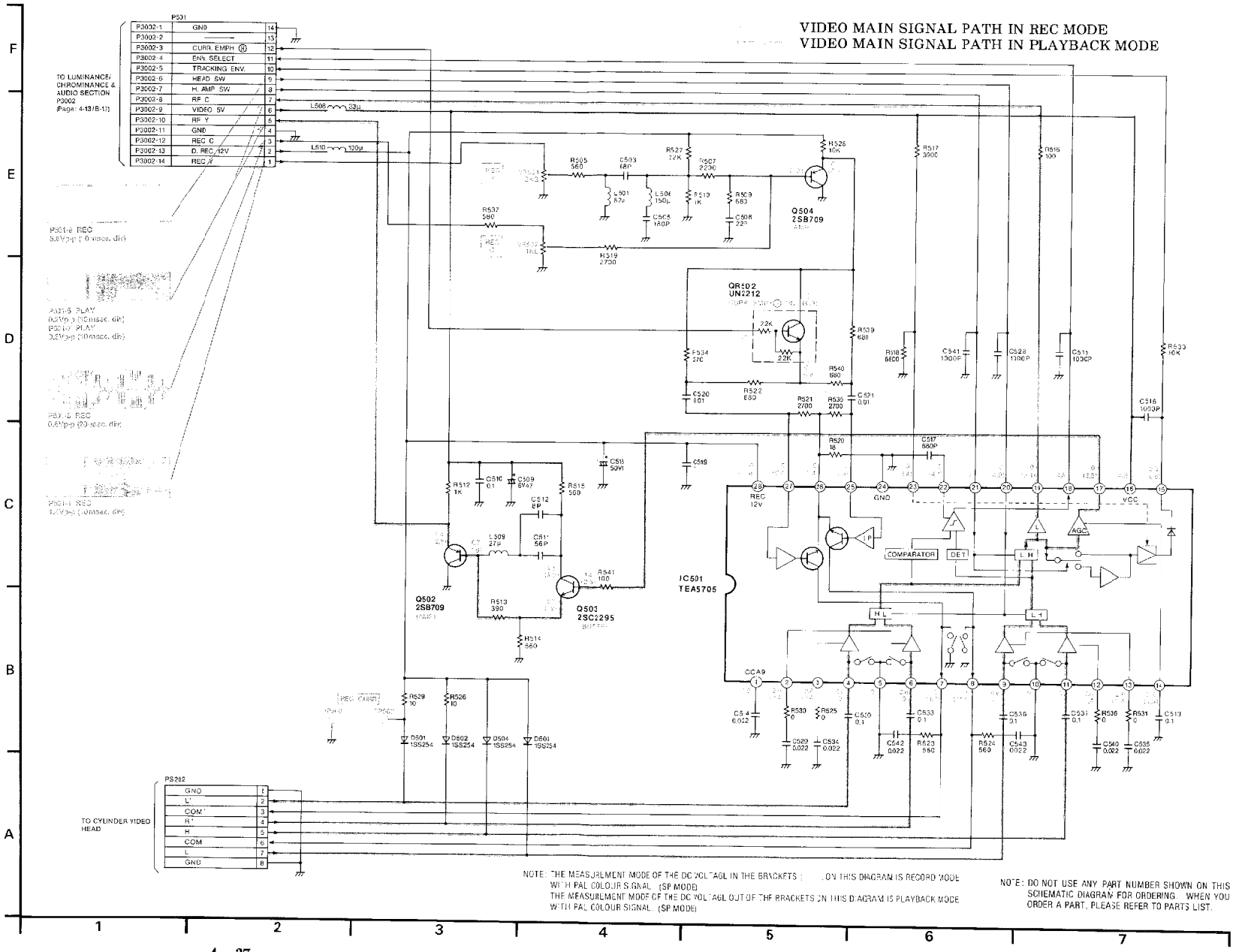
4-11. INPUT/OUTPUT PACK C.B.A.(VEP03B93B)



INPUT/OLTPUT PACK C.B.A.	
Transistor	
Q3901	C-3
Q3902	C-3
Q3903	B-3
Q3904	B-3
Transistor & Resistor	
QR3901	C-3
QR3902	C-3
QR3903	C-3
QR3904	B-4
Integrated Circuit	
IC3901	C-2
IC3902	B-2
IC3903	B-4
IC3904	C-5
IC4901	C-4
IC4903	C-1
IC4904	B-2
Connector	
P3901	C-5
PS3901	A-4
PS3902	A-2

ADDRESS NFORMATION

4-12. HEAD AMP SCHEMATIC DIAGRAM



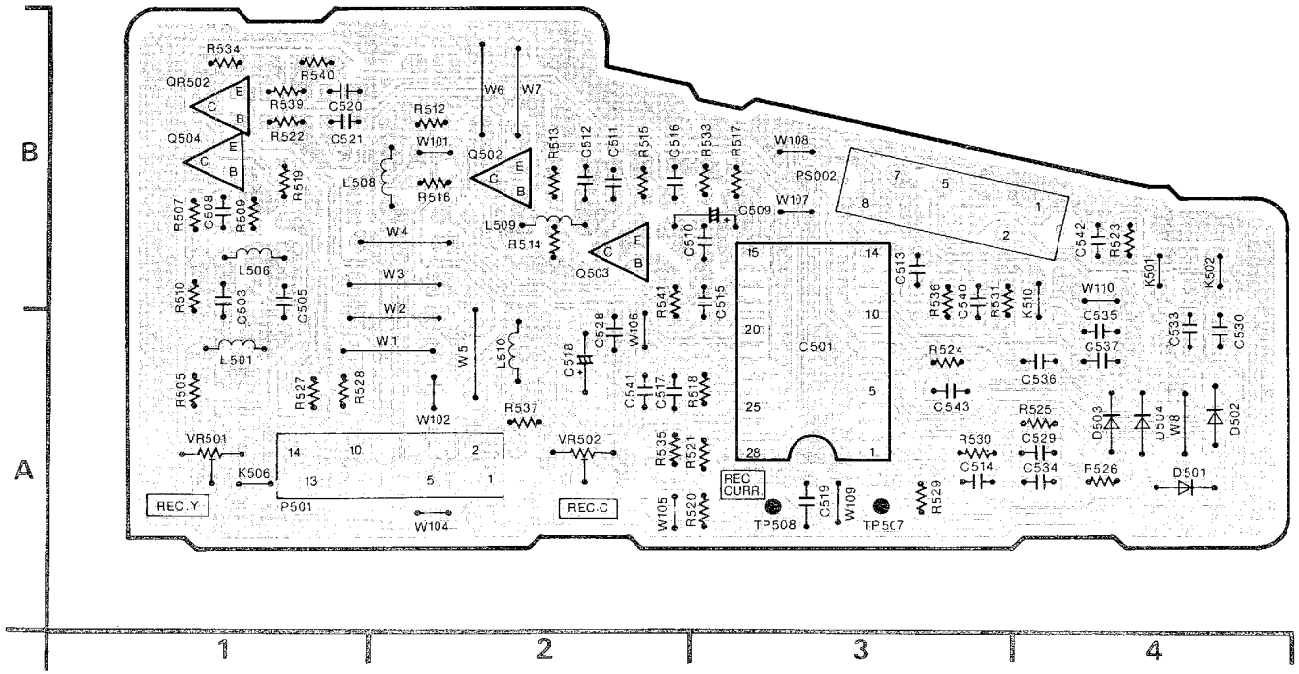
NOTE: THE MEASURLMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE WITH PAL COLOUR SIGNAL. (SP MODE)
THE MEASURLMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL. (SP MODE)

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

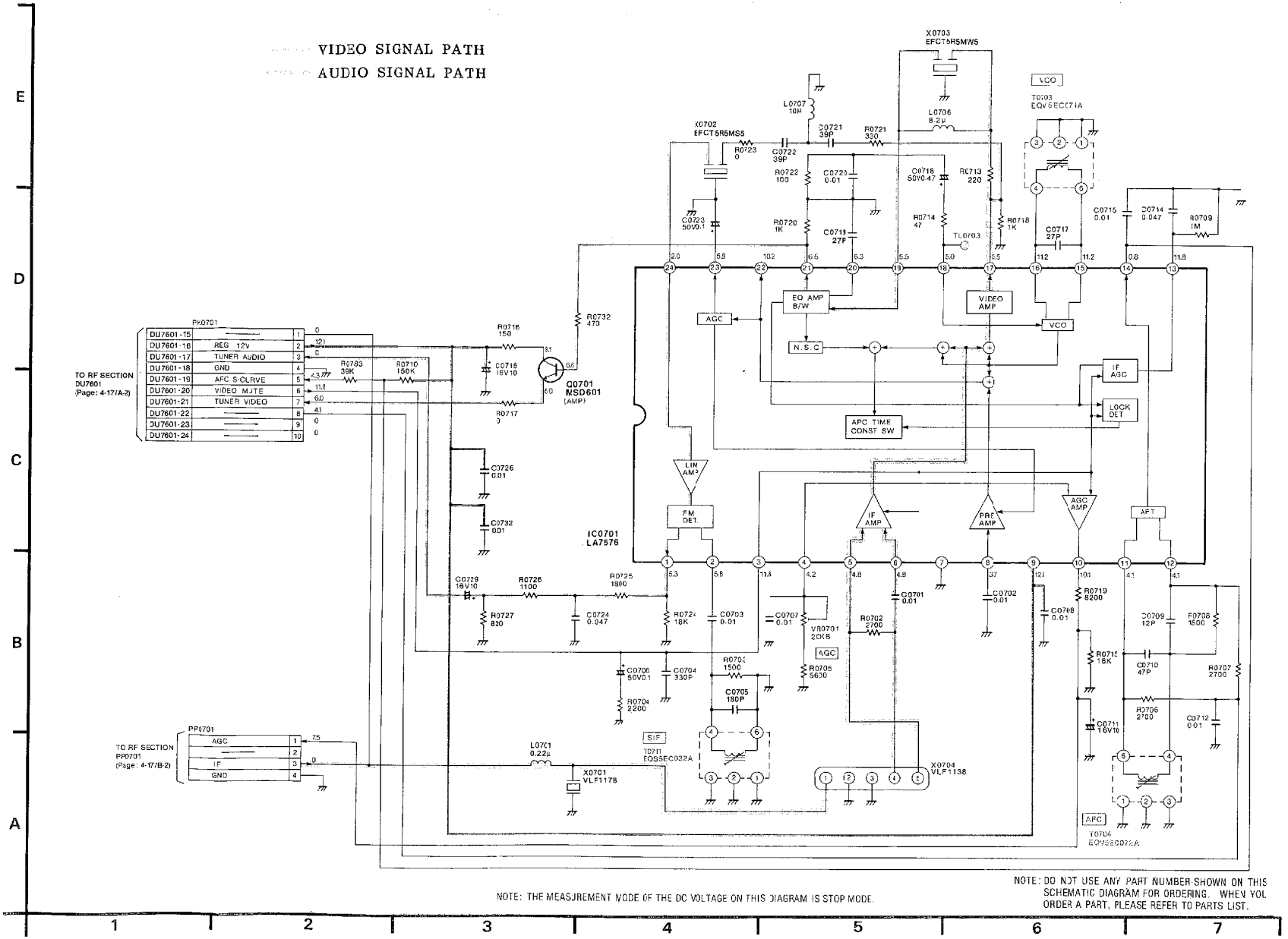
4-13. HEAD AMP C.B.A.(VEP05182G)

HEAD AMP C.B.A.	
Transistor	
Q502 Q503 Q504	B-2 B-2 B-1
Transistor & Resistor	
QR502	B-1
Integrated Circuit	
IC501	A-3
Test Point	
TP507 TP508	A-3 A-3
Adjustment	
VR501 VR502	A-1 A-2
Connector	
P501 PS202	A-1 B-3

ADDRESS INFORMATION



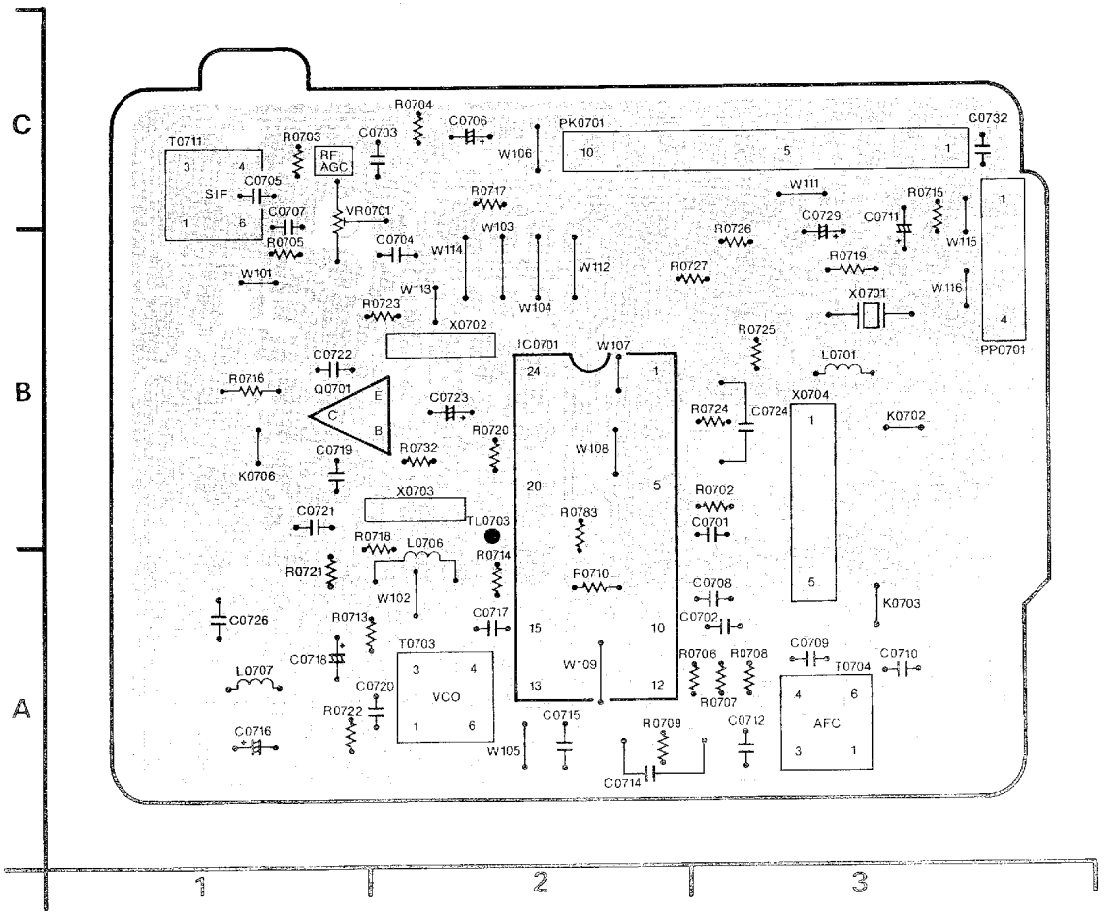
4-14 TV DEMODULATOR PACK SCHEMATIC DIAGRAM



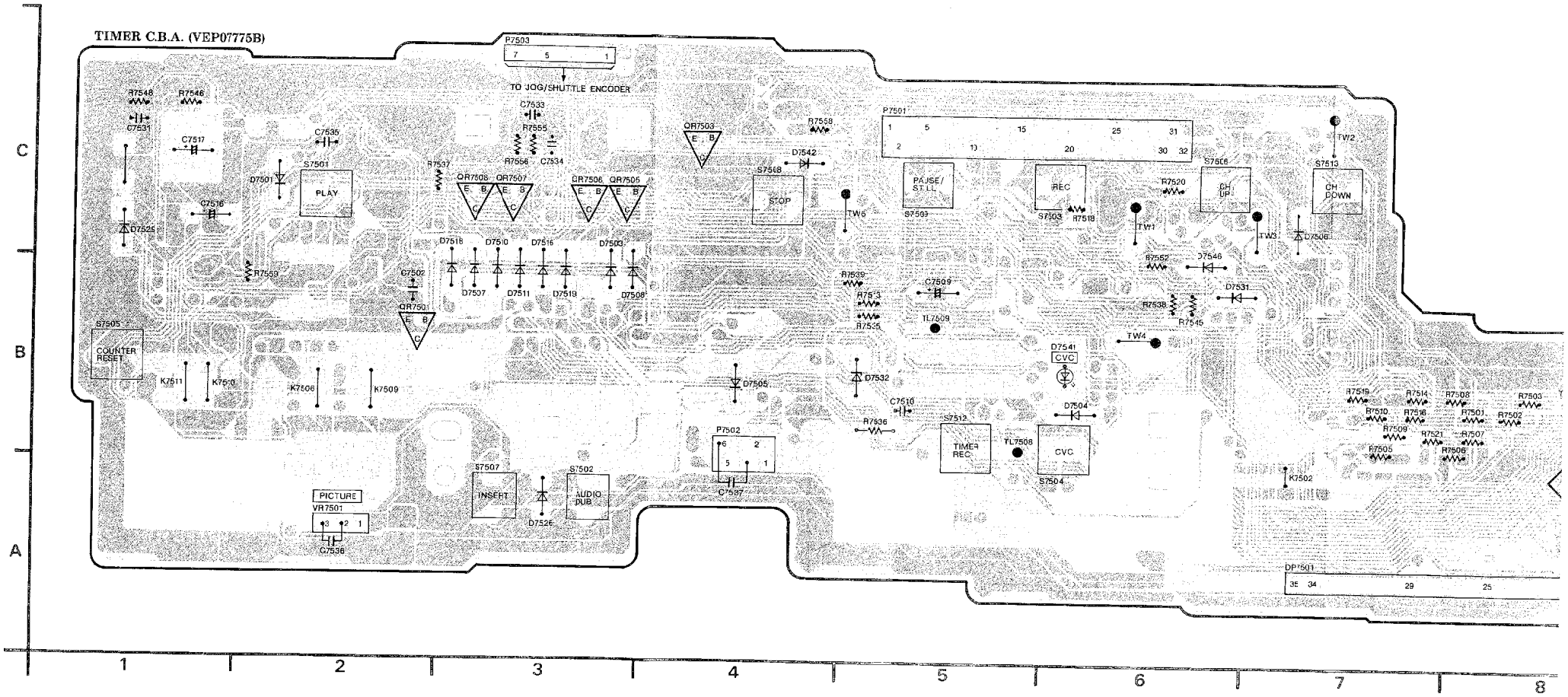
4-15 TV DEMODULATOR PACK C B A.(VEP07801A)

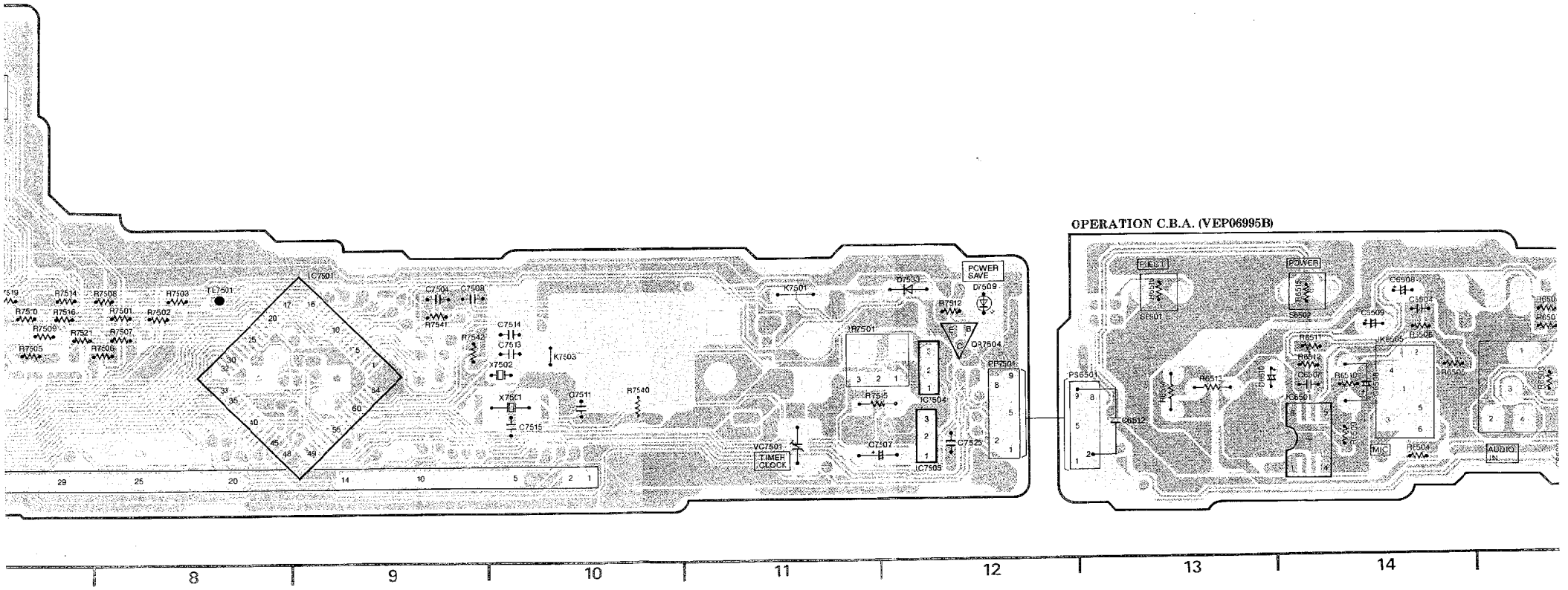
TV DEMODULATOR PACK C.B.A.	
Transistor	
Q0701	B-1
Integrated Circuit	
IC0701	B-2
Test Point	
TL0703	B-2
Adjustment	
T0703	A-2
T0704	A-3
T0711	C-1
VR0701	C-1
Connector	
PK0701	C-2
PP0701	C-3

ADDRESS INFORMATION

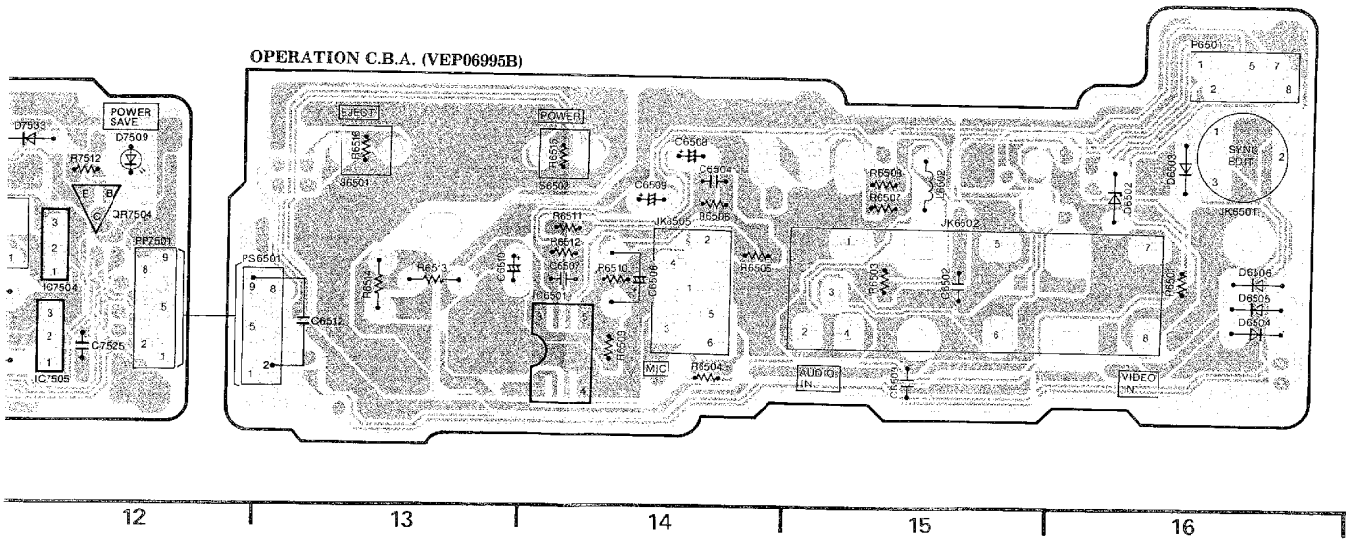


4-16 TIMER C B A (VEP07775B) & OPERATION C.B.A.(VEP06995B)




IC7501
TL7501
R7519
R7514
R7508
R7503
R7510
R7516
R7501
R7502
R7509
R7521
R7507
R7505
R7506
C7504
C7508
R7541
C7514
C7513
R7542
K7503
X7502
X7501
C7515
C7511
R7540
K7501
D7533
R7512
D7509
POWER SAVE
Q7504
R7501
IC7504
R7515
C7525
PP7501
VC7501
TIMER CLOCK
C7507
IC7505
OPERATION C.B.A. (VEP06995B)
EJECT
POWER
PS6501
C6508
C6509
C6503
C6506
R6511
R6514
C6507
R6510
C6501
R6513
R6512
C6512
R6504
MIC
AUDIO IN
8
9
10
11
12
13
14

OPERATION C.B.A. (VEP06995B)

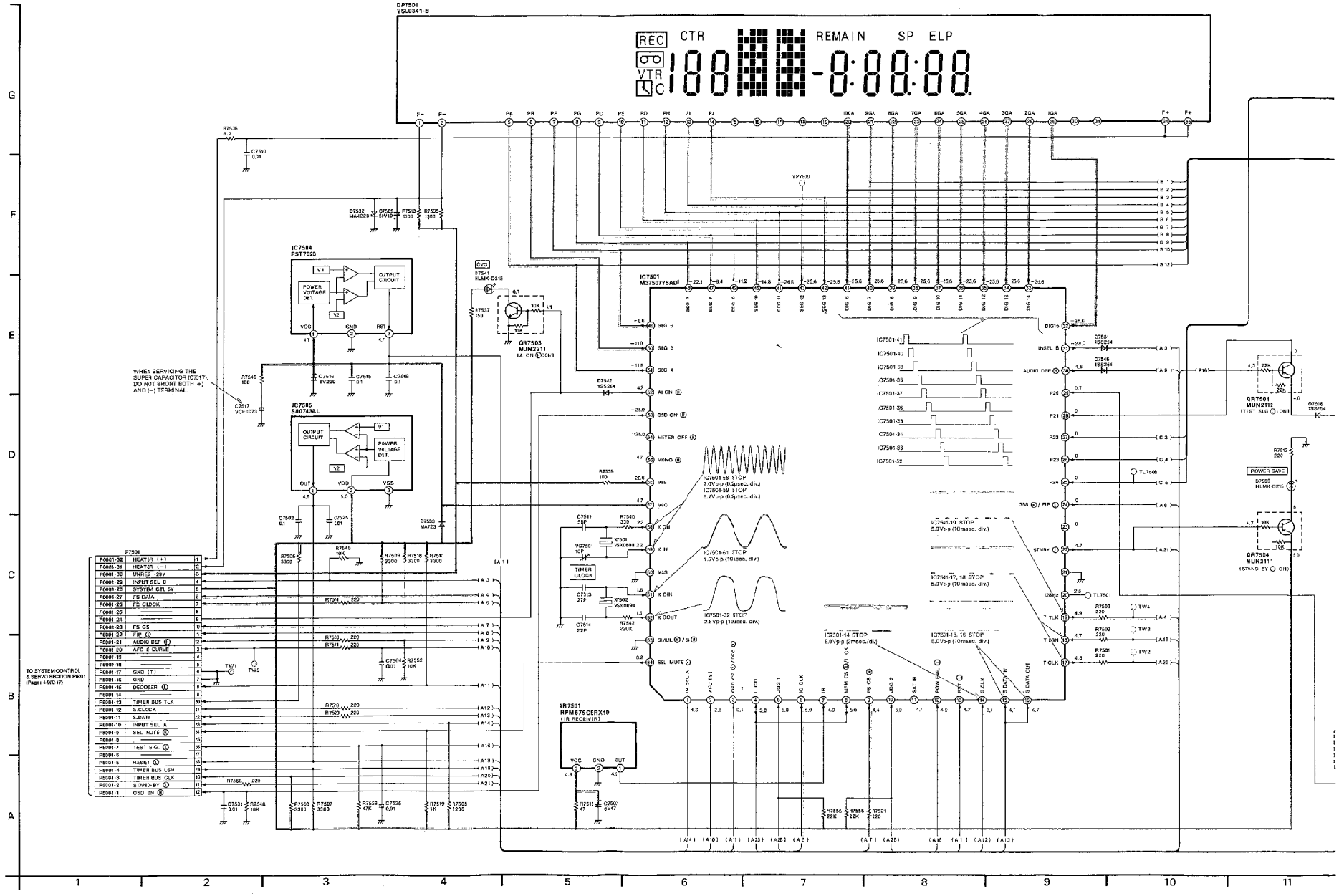


12 13 14 15 16

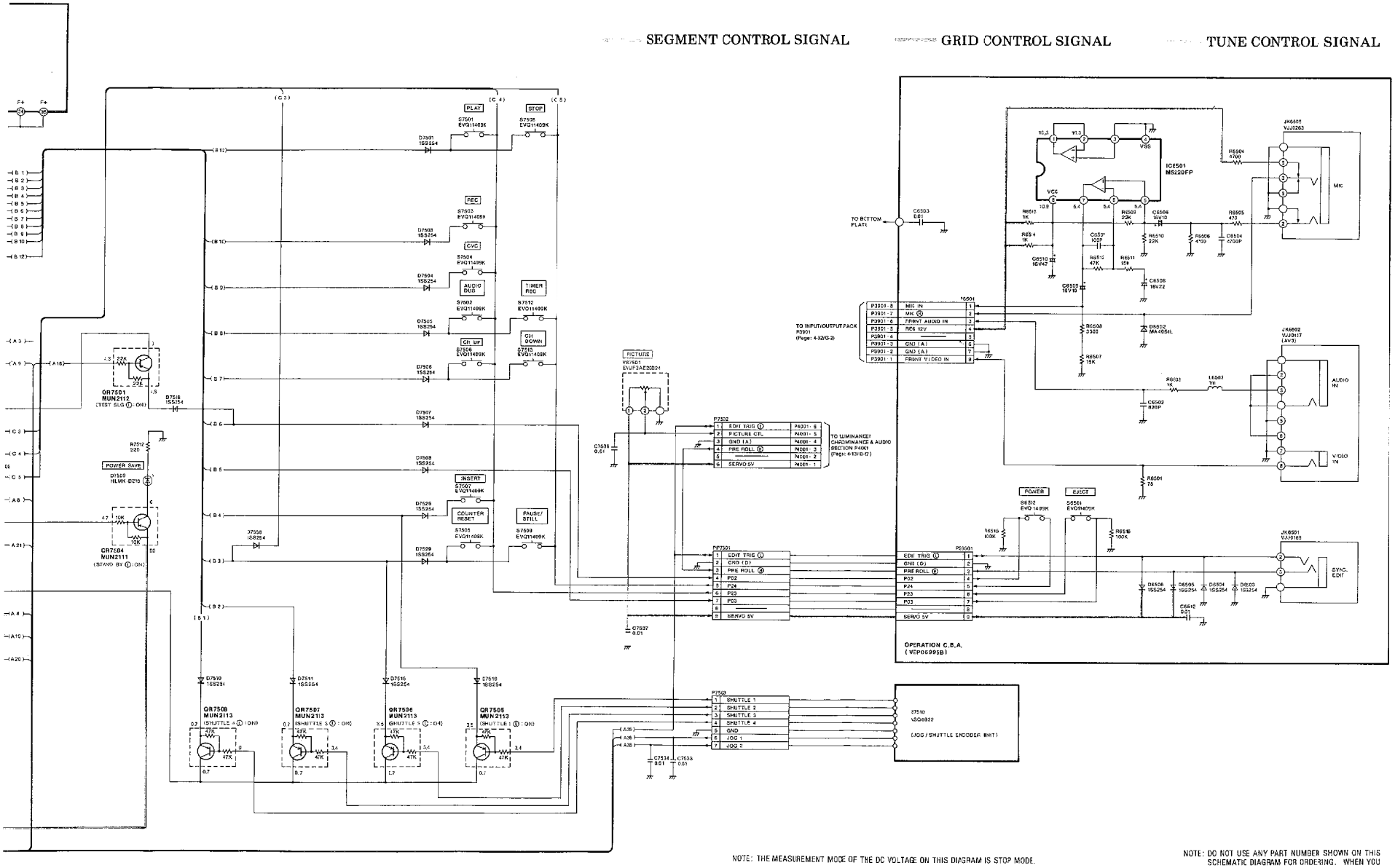
TIMER C.B.A.	
Transistor & Resistor	
QR7501	B-2
QR7503	C-4
QR7504	B-12
QR7505	C-3
QR7506	C-3
QR7507	C-3
QR7508	C-3
Integrated Circuit	
IC6501	A-14
IC7501	B-9
IC7504	A-12
IC7505	A-12
Test Point	
TL7501	B-8
TL7506	B-5
TL7509	B-5
TW1	C-6
TW2	C-7
TW3	C-7
TW4	B-6
TW5	C-5
Adjustment	
VC7501	A-11
VR7501	A-2
Connector	
P6501	B-16
P7501	C-5
P7502	B-4
P7503	C-3
PP7501	A-12
PS6501	B-13

ADDRESS INFORMATION

4-17. TIMER & OPERATION SCHEMATIC DIAGRAM



SEGMENT CONTROL SIGNAL GRID CONTROL SIGNAL TUNE CONTROL SIGNAL

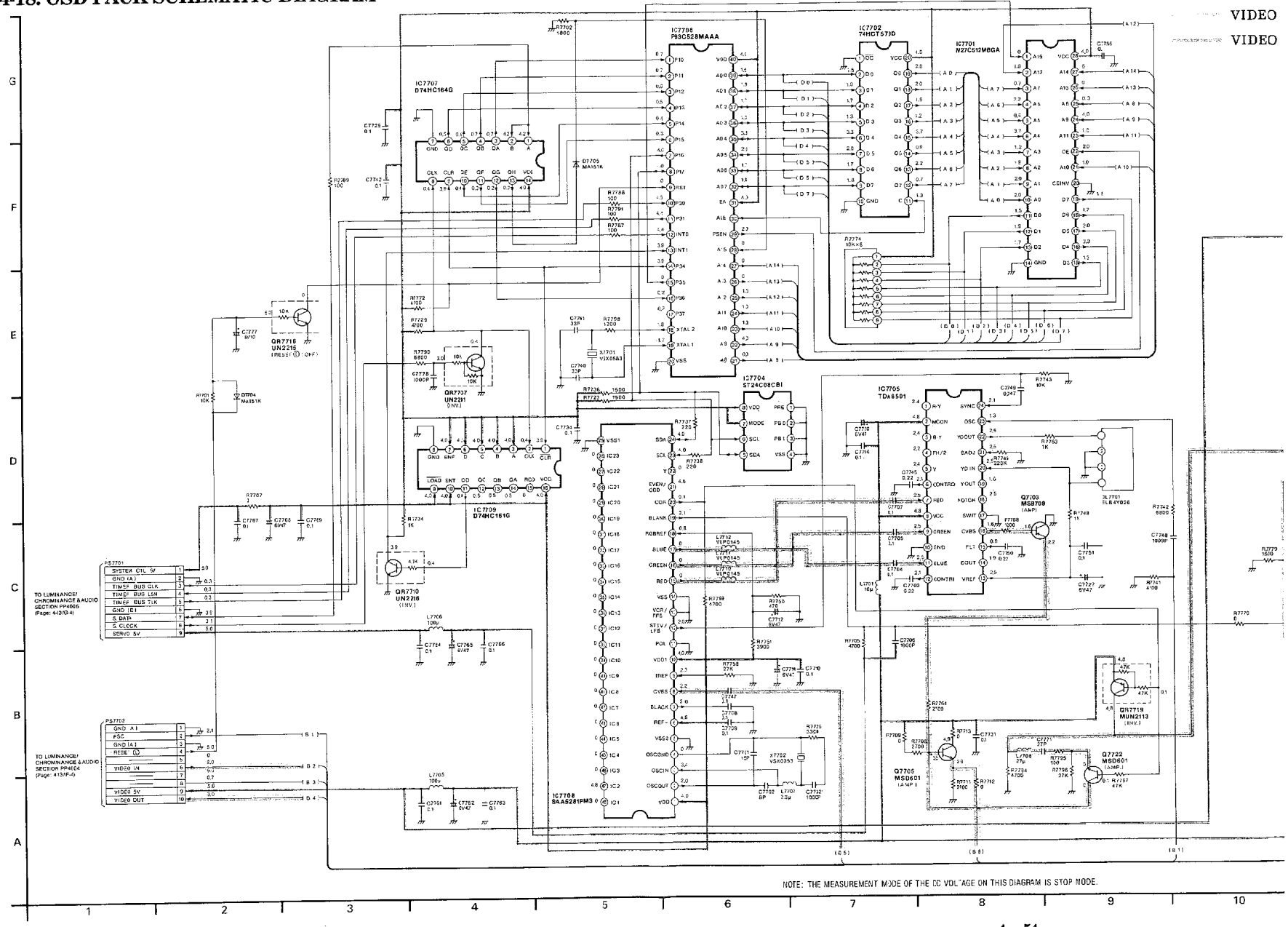


NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

10 11 12 13 14 15 16 17 18 19 20 21

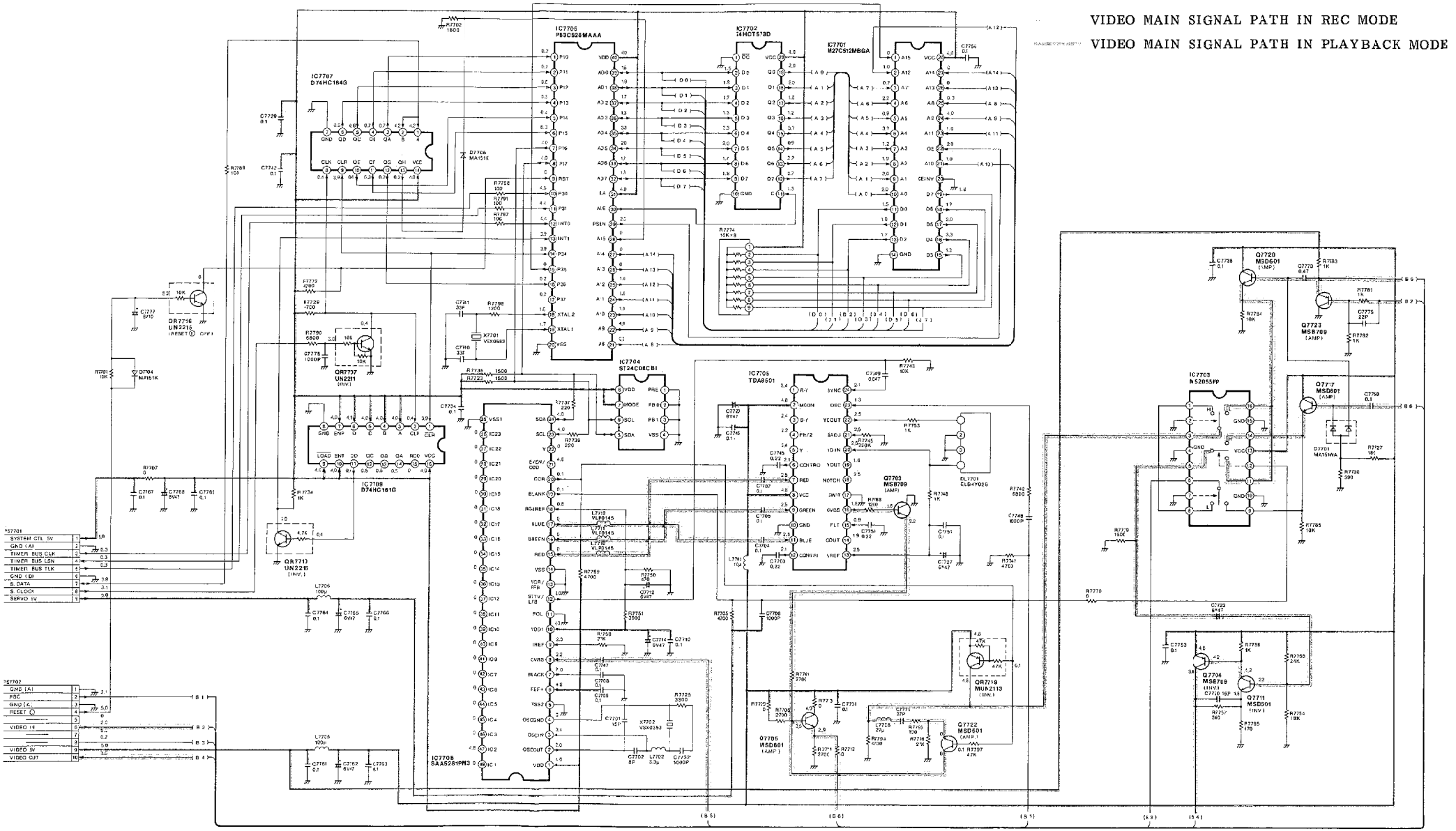
4-18. OSD PACK SCHEMATIC DIAGRAM



'ACK SCHEMATIC DIAGRAM

VIDEO MAIN SIGNAL PATH IN REC MODE

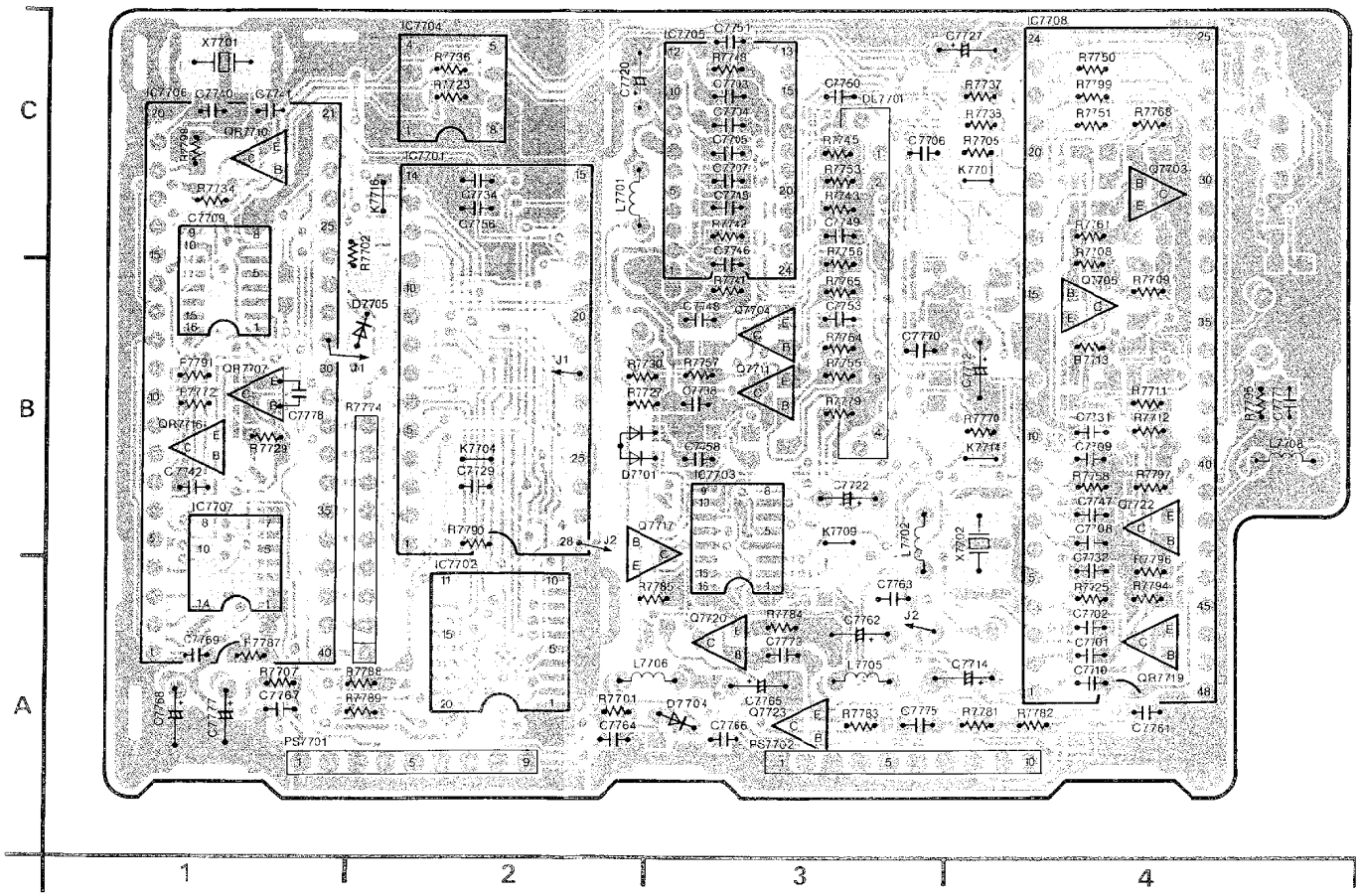
VIDEO MAIN SIGNAL PATH IN PLAYBACK MODE



NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

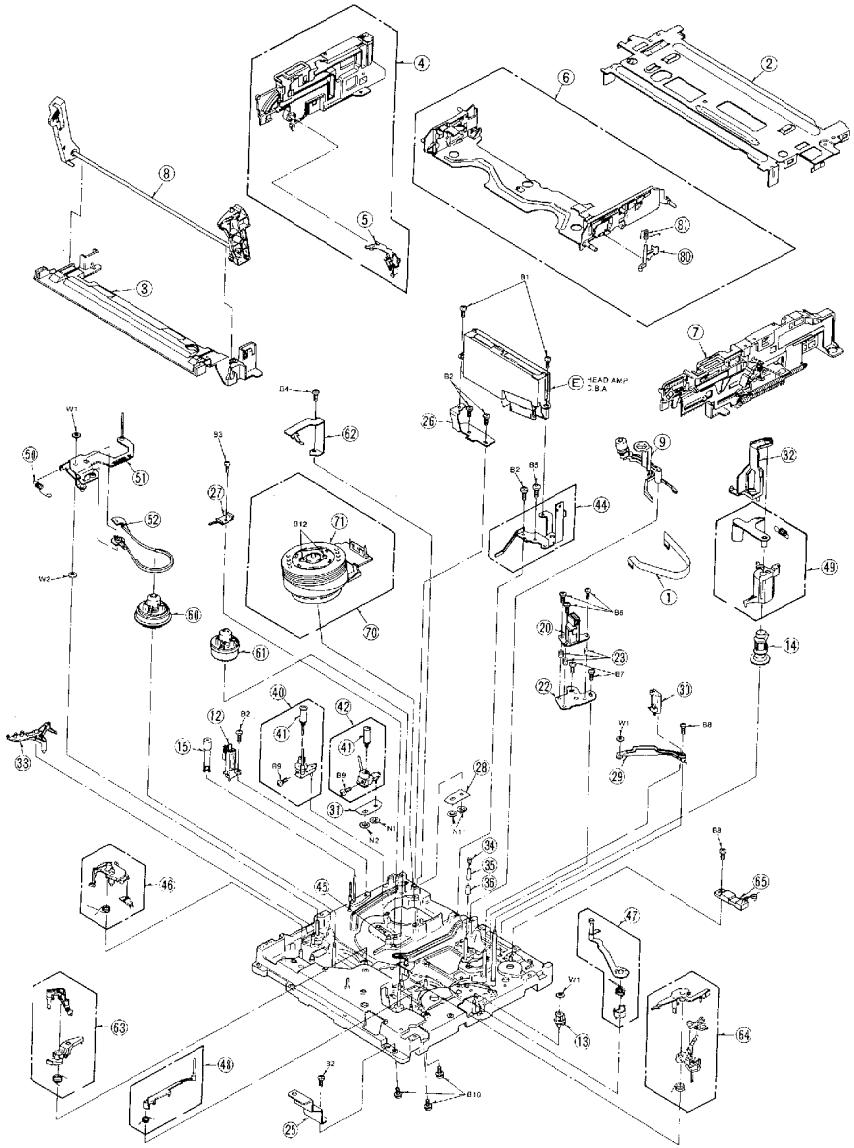
4-19. OSD PACK C.B.A.(VEP06993Q)



OSD PACK C.B.A.	
Transistor	
Q7703	C-4
Q7704	B-3
Q7705	B-4
Q7711	B-3
Q7717	B-3
Q7720	A-3
Q7722	B-4
Q7723	A-3
Transistor & Resistor	
QR7707	B-1
QR7710	C-1
QR7716	B-1
QR7719	A-4
Integrated Circuit	
IC7701	C-2
IC7702	A-2
IC7703	B-3
IC7704	C-2
IC7705	C-3
IC7706	C-1
IC7707	B-1
IC7708	C-4
IC7709	C-1
Connector	
PS7701	A-1
PS7702	A-3

ADDRESS INFORMATION

SECTION 5
EXPLODED VIEWS & PARTS LIST
5-1 EXPLODED VIEW & MECHANICAL REPLACEMENT PARTS LIST
❶ CHASSIS PARTS SECTION (1)



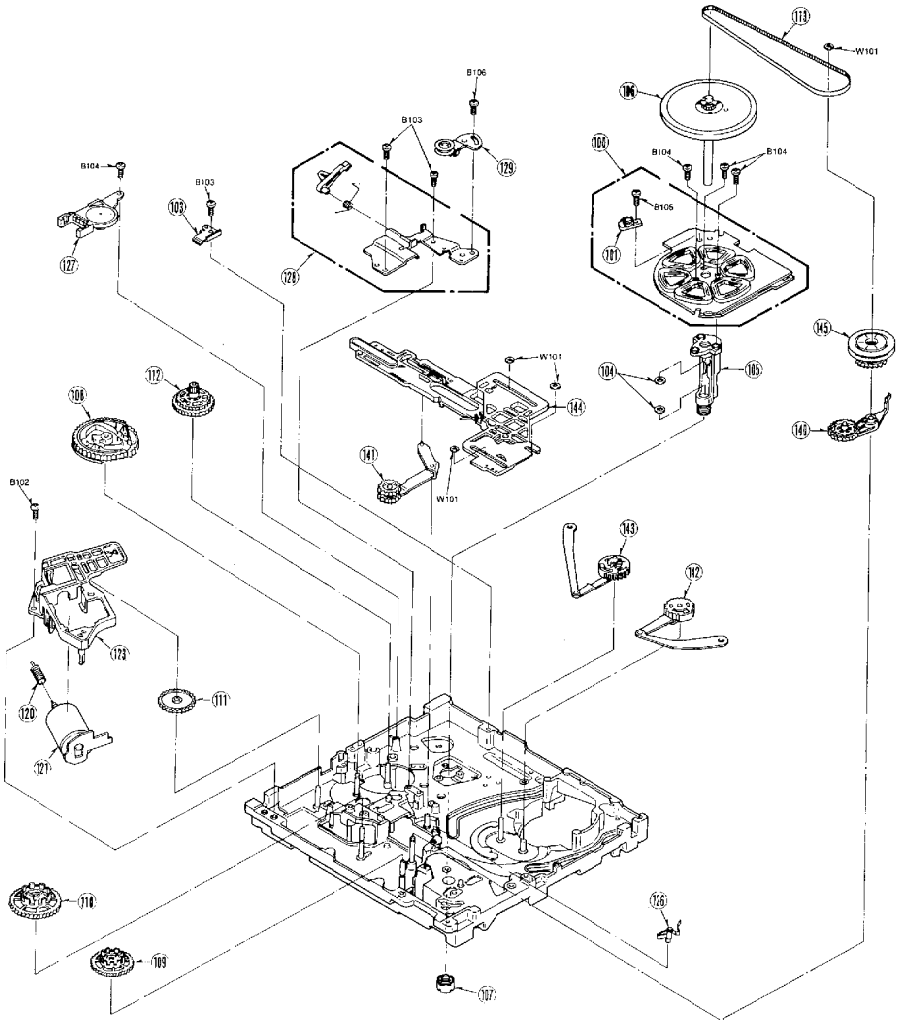
Note:1.* Be sure to make your orders of replacement parts according to this list.
2.IMPORTANT SAFETY NOTICE
Components identified with the mark ⟨!⟩ have the special characteristics for safety. When replacing any of these components,use only the same type.

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
**********		NV-S0450E3			
1(1)		VWJ0743	FLEXIBLE CABLE (6P)	1	P4002-P1501
2(1)		VMA8644	TCP PLATE	1	
3(1)		VMA8787	CASSETTE GUIDE	1	
4(1)		VXA4560	SIDE PLATE (L) UNIT	1	
5(1)		VML2902	OPENER LEVER	1	
6(1)		VXA4661	CASSETTE HOLDER PLATE UNIT	1	
7(1)		VXA4806	SIDE PLATE (R) UNIT	1	
8(1)		VXP1339	MAIN SHAFT UNIT	1	
9(1)		VXL2440	CLEANER ARM UNIT	1	
12(1)		VBS0052	FE HEAD	1	
13(1)		VDG0871	CARRIAGE CONNECTION GEAR	1	
14(1)		VDG0886	PINCH CAM GEAR	1	
15(1)		VXP1402	IMPEDANCE ROLLER UNIT	1	
20(1)		VEB0217	A/C HEAD (1) UNIT	1	
22(1)		VMA8624	A/C HEAD BASE	1	
23(1)		VMB2515	A/C HEAD SPRING	3	
25(1)		VMA8761	MOUNT ANGLE	1	
26(1)		VMA9158	HEAD AMP MOUNT ANGLE (L)	1	
27(1)		VMC0917	EARTH SPRING	1	
28(1)		VMA8874	INCLIND BASE HOLDER (S)	1	
29(1)		VMB2078	P5 STOPPER BASE	1	
30(1)		VXA4927	P5 POST STOPPER	1	
31(1)		VMA8873	INCLIND BASE HOLDER (T)	1	
32(1)		VMB2101	OPINER PIECE	1	
33(1)		VML2776	TENSION SPRING ARM	1	
34(1)		VMX1544	P4 UPPER LIMITER	1	
35(1)		VMX2175	P4 SLEEVE	1	
36(1)		VMX2176	P4 LOWER LIMITER	1	
40(1)		VXA5245KIT	INCLINED BASE (S) UNIT	1	OR VXA4982KIT
41(1)		VXP1415	ROLLER POST	2	
42(1)		VXA5247KIT	INCLINED BASE (T) UNIT	1	OR VXA4984KIT
44(1)		VXA4974	HEAD AMP MOUNT ANGLE (R) U.	1	
45(1)		VMS5383	CASSETTE POSITION FIXTURE	1	
46(1)		VXL2310	REVIEW ARM UNIT	1	
47(1)		VXL2306	P5 ARM UNIT	1	
48(1)		VXL2394	TAKE UP TENSION REGULATOR	1	
			ARM UNIT		
49(1)		VXL2246	PINCH ARM UNIT	1	
50(1)		VNB2434	TENSION SPRING	1	
51(1)		VXL2309	TENSION ARM (T) UNIT	1	
52(1)		VXZ0310	TENSION BAND UNIT	1	
60(1)		VXR0236	SUPPLY REEL TABLE UNIT	1	
61(1)		VXR0237	TAKE UP REEL TABLE UNIT	1	
62(1)		VXS0114	EARTH PLATE	1	
63(1)		VXZ0312	SUPPLY BRAKE ARM UNIT	1	
64(1)		VXZ0313	TAKE UP BRAKE ARM UNIT	1	
65(1)		2SB1370YD01E	POWER TRANSISTOR	1	
70(1)		VEC1195	CYLINDER UNIT	1	SUPPLIED FROM MBV]
71(1)		VEH0705	UPPER CYLINDER UNIT	1	SUPPLIED FROM MBV]
80(1)		VML2680	RELEASE LEVER	1	
81(1)		VMB2013	RELEASE SPRING	1	
B1(1)		VHD0773	SCREW	2	
B2(1)		XTV26+6F	SCREW	5	
B3(1)		XTV26+4F	SCREW	1	
B4(1)		XTN3+6PFZ	SCREW	1	
B5(1)		XTV26+10F	SCREW	1	
B6(1)		VHD0762	SCREW	3	
B7(1)		XTV26+6FZ	SCREW	2	
B8(1)		XTV26+8F	SCREW	2	
B9(1)		XQN2+AJ4	SCREW	2	
B10(1)		VHD0342	SCREW	3	
B12(1)		VHD0425	SCREW	2	
N1(1)		VHN0192	NUT	3	
N2(1)		VHN0193	NUT	1	
W1(1)		VMX2208	WASHER	3	
W2(1)		XWGV26D5G	WASHER	1	

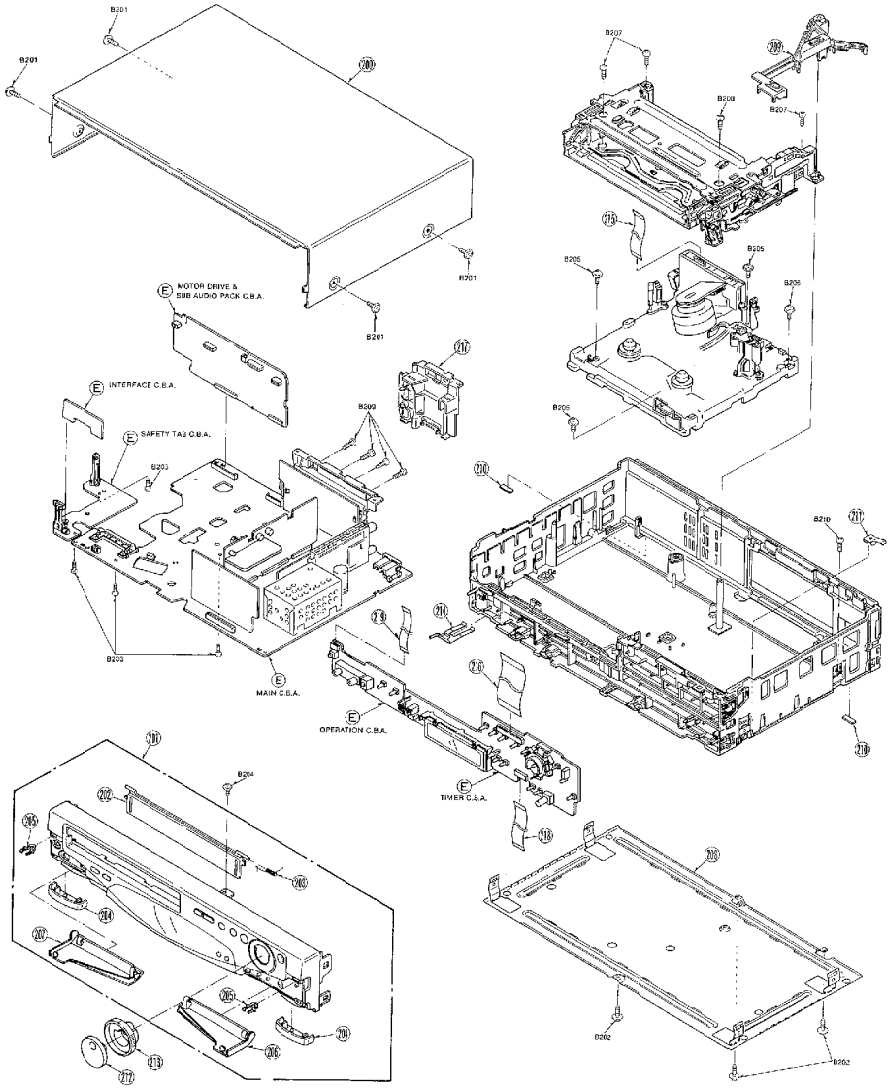
Note:1.* Be sure to make your orders of replacement parts according to this list.
2.IMPORTANT SAFETY NOTICE
Components identified with the mark ⟨!⟩ have the special characteristics for safety. When replacing any of these components,use only the same type.

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
100(2)		VEB0927	CAPSTAN STATOR UNIT	1	
101(2)		VBH0061	FG HEAD	1	
103(2)		VMA9930	ROTOR STOPPER	1	
104(2)		VMX1927	OIL SEAL	2	
105(2)		VXD0140	HOUSING UNIT	1	
106(2)		VXP1519	CAPSTAN ROTOR UNIT	1	
107(2)		VXQ0297	THRUST SCREW UNIT	1	
108(2)		VDG0913	MAIN CAM GEAR	1	
109(2)		VDG0956	SUPPLY REEL GEAR	1	
110(2)		VDG0957	TAKE UP REEL GEAR	1	
111(2)		VDG0868	WORM WHEEL GEAR	1	
112(2)		VDG0885	SUB CAM GEAR	1	
113(2)		VDV0235	TIMING BELT	1	
120(2)		VDG0866	WORM GEAR	1	
121(2)		VEM0427	LOADING MOTOR (1) UNIT	1	
123(2)		VMD1942	MOTOR BRACKET	1	
126(2)		VML2725	IDLER CONTROL LEVER	1	
127(2)		VSS0365	MODE SW	1	
128(2)		VXA5138	SS BRAKE BASE UNIT	1	
129(2)		VXA4799	TENSION ROLLER UNIT	1	
140(2)		VXL2378	IDLER ARM UNIT	1	
141(2)		VXL2372	DIRECT LEVER UNIT	1	
142(2)		VXL2299	SUPPLY LOADING ARM UNIT	1	
143(2)		VXL2300	TAKE UP LOADING ARM UNIT	1	
144(2)		VXL2307	MAIN LEVER UNIT	1	
145(2)		VXP1409	CENTRE CLUTCH	1	
B102(2)		XTV26+8F	SCREW	1	
B103(2)		XTV26+6F	SCREW	3	
B104(2)		VHD0753	SCREW	4	
B105(2)		VHD0754	SCREW	1	
B106(2)		XSB26+4FZ	SCUEW	1	
W101(2)		VMX2208	WASHER	4	

❷ CHASSIS PARTS SECTION (2)



❸ CASING PARTS SECTION



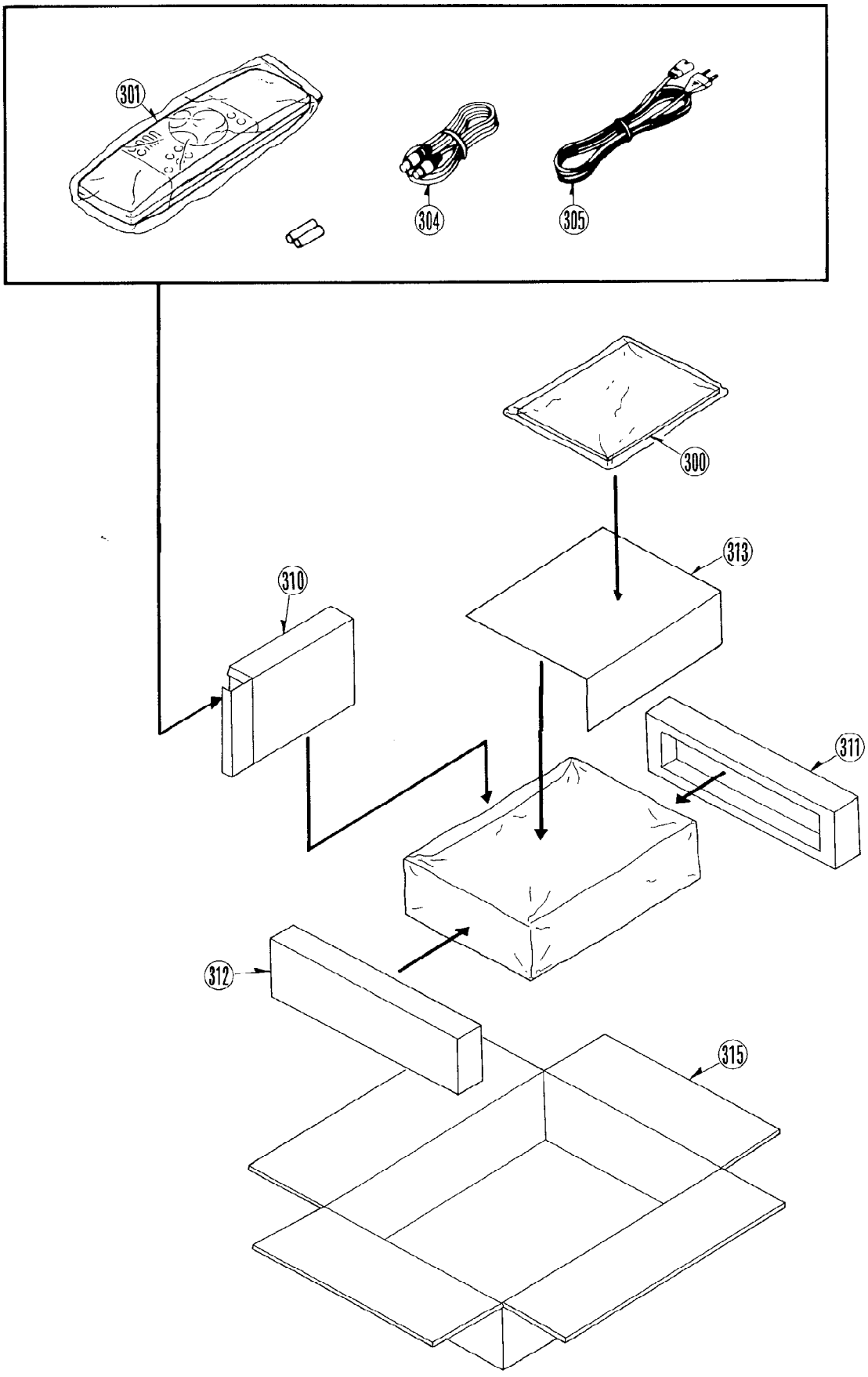
Note:1.* Be sure to make your orders of replacement parts according to this list.
2.IMPORTANT SAFETY NOTICE
Components identified with the mark ⟨!⟩ have the special characteristics for safety. When replacing any of these components,use only the same type.

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
200(3)	VQM1105	TOP PANEL	1	
201(3)	VYP5796	FRONT PANEL UNIT	1	[SUPPLIED FROM MBV]
202(3)	VKF2293	BLINDER PANEL	1	
203(3)	VMB2521	BLINDER SPRING	1	
204(3)	VKA0153	LEG	2	
205(3)	VKP0550	DOOR LOCK PIECE	2	
206(3)	VKF2307	FRONT DOOR (R)	1	[SUPPLIED FROM MBV]
207(3)	VYF2184	FRONT DOOR (L) UNIT	1	[SUPPLIED FROM MBV]
208(3)	VKM0404	BOTTOM PLATE	1	
209(3)	VJF1134	PACK HOLDER	1	
210(3)	VKA0122	FOOT	2	
211(3)	VMC1065	EARTH SPRING	1	
212(3)	VGU6770	J/C DIAL	1	
213(3)	VGU6772	SHUTTLE RING	1	
214(3)	VMC1062	JACK EARTH SPRING	1	
215(3)	VWJ0867	FLAT CARD CABLE	1	P501-P3002
216(3)	VWJ32C91E0B8	FLAT CARD CABLE	1	P6001-P7501
217(3)	VJH0790	ANTENNA JACK PLATE	1	
218(3)	VWJ0940	FLAT CARD CABLE	1	[SUPPLIED FROM MBV]
				P4001-P7502
219(3)	VWJ0909	FLAT CARD CABLE	1	[SUPPLIED FROM MBV]
				P3901-P6501
B201(3)	XTW3+10TFZ	SCREW	4	
B202(3)	VHD0059	SCREW	3	
B203(3)	VHD0772	SCREW	4	
B204(3)	VHD0773	SCREW	1	
B205(3)	VHD0168	SCREW	3	
B206(3)	VHD874	SCREW	1	
B207(3)	XTV26+8FR	SCREW	3	
B208(3)	XTV25+10F	SCREW	1	
B209(3)	XTV3+8GFZ	SCREW	4	
B210(3)	XTN2+8GFZ	SCREW	1	

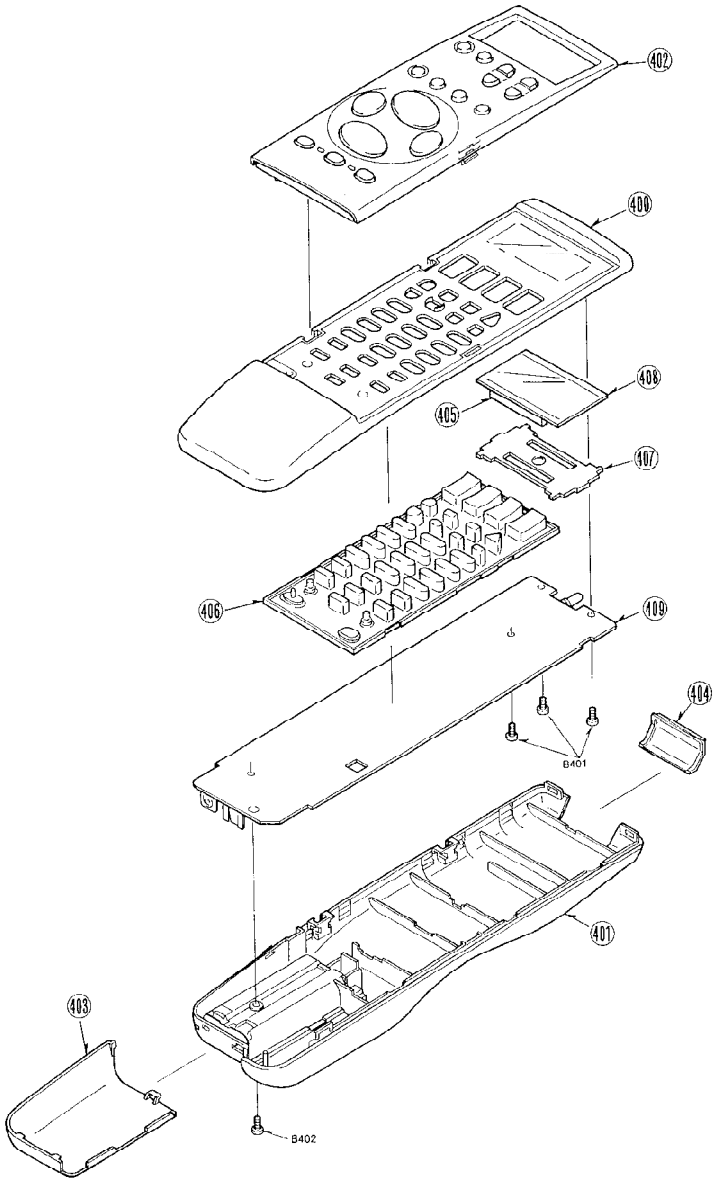
Note:1.* Be sure to make your orders of replacement parts according to this list.
2.IMPORTANT SAFETY NOTICE
Components identified with the mark ⟨!⟩ have the special characteristics for safety. When replacing any of these components,use only the same type.

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
300(4)	VQT5962	OPERATING INSTRUCTIONS	1	[SUPPLIED FROM MBV]
		(GERMAN/ENGLISH/FRENCH)		⟨!⟩
300(4)	VQT5963	OPERATING INSTRUCTIONS	1	[SUPPLIED FROM MBV]
		(SPANISH/ITALIAN/DUTCH)		⟨!⟩
300(4)	VQT5964	OPERATING INSTRUCTIONS	1	[SUPPLIED FROM MBV]
		(SWEDISH/DANISH/FINNISH)		⟨!⟩
300(4)	VQT5965	OPERATING INSTRUCTIONS	1	[SUPPLIED FROM MBV]
		(PORTUGUESE/GREEK)		⟨!⟩
301(4)	VEQ1675	REMOTE CONTROLLER	1	[SUPPLIED FROM MBV]
304(4)	VJA0710	DIN RF CABLE	1	
305(4)	VJA0664	AC CORD	1	⟨!⟩
310(4)	VPK0825	ACCESSORIES PAKING	1	
311(4)	VPM4034	CUSHION (R)	1	
312(4)	VPM4035	CUSHION (L)	1	
313(4)	VEM3874	UPPER PAD	1	[SUPPLIED FROM MBV]
315(4)	VPG7993	PACKING	1	[SUPPLIED FROM MBV]
		SERVICE FIXTURES & TOOLS		
	VFJ8125H3F	VHS ALIGNMENT TAPE(PAL)	1	
	VFK0335	RETAINING RING REMOVER	1	
		(3mm/4mm)		
	VFK0329	POST ADJUSTMENT SCREWDRIVER	1	
	VFK0326	HEX WRENCH SET	1	
	VFK0132	BACK TENSION METER	1	
	VFK27	HEAD CLEANING STICK	1	
	VFK1024	MORLYTONE GREASE	1	
	VFK0341	UPPER CYLINDER REMOVER	1	
	VFK0680	WHITE GREASE	1	
	VFK0851	CENTRE FIXING TOOL	1	
	VFK0330	FINE ADJUSTMENT GEAR DRIVER	1	
	VFK139	20P EXTENSION CABLE	1	
	VFK0678	18P EXTENSION CABLE	1	
	VFK0917	11P EXTENSION CABLE	1	
	VFK0918	12P EXTENSION CABLE	1	

❹ PACKING PARTS SECTION



❺ REMOTE CONTROLLER UNIT



Note: 1. * Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE
Components identified with the mark <!> have the special characteristics for safety. When replacing any of these components, use only the same type.

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
400(5)		VYKG515	TOP COVER UNIT	1	[SUPPLIED FROM MBV]
401(5)		VYK5446	BOTTOM COVER UNIT	1	
402(5)		VYKG367	DOOR PANEL UNIT	1	[SUPPLIED FROM MBV]
403(5)		VKF2115	BATTERY COVER	1	
404(5)		VKW1002	IR WINDOW	1	
405(5)		VSQC830	CONDUCTIVE RUBBER	2	
406(5)		VSPC861	RUBBER CONTACT	1	[SUPPLIED FROM MBV]
407(5)		VSQC829	LCD SPACER	1	
408(5)		VSLC319A	LCD	1	
409(5)		----------	REMOTE CONTROLLER C.B.A.	1	THE C.B.A. IS NOT
					SUPPLIED AS SPARE
					PART.
B401(5)		XTB2+6G	SCREW	3	
B402(5)		XTB2+8GFZ	SCREW	1	

5-2. ELECTRICAL REPLACEMENT PARTS LIST

Note:1.* Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE
Components identified with the mark <!> have the special characteristics for safety. When replacing any of these components,use only the same type.
3.Unless otherwise specified,
All resistors are in OHMS ,K=1,000 OHMS. All capacitors are in MICRO-FARADS(uf),P=uuF.
4.The P.C.Board units marked width'■'show below the main assembled parts.

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
**********		NV-SD450EG			
		VEP06980C	MAIN C.B.A.	1	[SUPPLIED FROM MBV]
			(Page:5-8)		<!>(RTL)
					INCLUDING THE
					LUMINANCE &
					CHROMINANCE PACK
					C.B.A.(VEP03D27B),
					CNR PACK C.B.A.
					(VEP08171A),
					TV DEMODULATOR PACK
					C.B.A.(VEP07801A).
		VEP03D27B	LUMINANCE & CHROMINANCE	1	[SUPPLIED FROM MBV]
			PACK C.B.A.		(RTL)
					INCLUDING THE
					CNR PACK C.B.A.
					(VEP08171A),
					INCLUDED IN MAIN
					C.B.A.(VEP06980C).
		VEP08171A	CNR PACK C.B.A.	1	[SUPPLIED FROM MBV]
					(RTL)
					INCLUDED IN
					LUMINANCE &
					CHROMINANCE PACK
					C.B.A.(VEP03D27B).
		VEP07801A	TV DEMODULATOR PACK C.B.A.	1	[SUPPLIED FROM MBV]
					(RTL)
					INCLUDED IN MAIN
					C.B.A.(VEP06980C).
		VEP06993Q	OSD C.B.A.	1	[SUPPLIED FROM MBV]
			(Page:5-14)		(RTL)
		VEP03B93B	INPUT/OUTPUT C.B.A.	1	[SUPPLIED FROM MBV]
			(Page:5-15)		(RTL)
		VEP04469L	MOTOR DRIVE C.B.A.	1	[SUPPLIED FROM MBV]
			(Page:5-15)		(RTL)
		VEP05182GPE	HEAD AMP C.B.A.	1	[SUPPLIED FROM MBV]
			(Page:5-16)		(RTL)
		VEP07775B	TIMER C.B.A.	1	[SUPPLIED FROM MBV]
			(Page:5-17)		(RTL)
		VEP06995B	OPERATION C.B.A.	1	[SUPPLIED FROM MBV]
			(Page:5-18)		(RTL)
		VEP00V29A	MAIN INTERFACE C.B.A.	1	[SUPPLIED FROM MBV]
			(Page:5-18)		(RTL)
		VEP00V88A	S-TAB C.B.A.	1	[SUPPLIED FROM MBV]
			(Page:5-18)		(RTL)
		VEP00D18B	RT CONNECTION C.B.A.	1	(RTL)
			(Page:5-18)		
		----------	MOTOR C.B.A.	1	C.B.A. IS INCLUDED
			(Page:5-10)		IN LOADING MOTOR (1)
					UNIT(VEM04Z7).
		ENG47210G	TUNER	1	<!>

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
F1101		XBA2C16TH15	FUSE	1	<!>
	■	VEP06980C	MAIN C.B.A.		[SUPPLIED FROM MBV]
					<!>(RTL)
C301		ECUM1H101JCN	C.CAPACITOR CH 50V 100P	1	
C302		ECUM1H330JCN	C.CAPACITOR CH 50V 33P	1	
C303		ECUM1H820JCN	C.CAPACITOR CH 50V 82P	1	
C304		ECUM1H120JCN	C.CAPACITOR CH 50V 12P	1	
C305		ECUM1H060DCN	C.CAPACITOR CH 50V 6P	1	
C306		ECUM1H100DCN	C.CAPACITOR CH 50V 10P	1	
C307		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C308		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C309		ECEA1HKA0R1	E.CAPACITOR 50V 0.1U	1	
C310-12		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	3	
C313		ECEA0JKA101	E.CAPACITOR 6.3V 100U	1	
C314		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	1	
C315		ECUM1H472KBN	C.CAPACITOR CH 50V 4700P	1	
C316		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C317		ECUM1H080DCN	C.CAPACITOR CH 50V 8P	1	
C318,19		ECUM1H101JCN	C.CAPACITOR CH 50V 100P	2	
C321		ECUM1H270JCN	C.CAPACITOR CH 50V 27P	1	
C322		ECEA0JKA101	E.CAPACITOR 6.3V 100U	1	
C323		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C324		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C325		ECUM1H223KBN	C.CAPACITOR CH 50V 0.022U	1	
C326		ECEA1HKA3R3	E.CAPACITOR 50V 3.3U	1	
C327		ECUM1EB23KBN	C.CAPACITOR CH 25V 0.082U	1	
C328		ECEA1HKN010	E.CAPACITOR 50V 1U	1	
C329		ECEA0JKA470	E.CAPACITOR 6.3V 47U	1	
C331,32		ECEA1CKA100	E.CAPACITOR 16V 10U	2	
C333		ECEA1HKN010	E.CAPACITOR 50V 1U	1	
C334		ECUM1H821JCN	C.CAPACITOR CH 50V 820P	1	
C335		ECUM1H221JCN	C.CAPACITOR CH 50V 220P	1	
C336		ECUM1H220JCN	C.CAPACITOR CH 50V 22P	1	
C340		ECUM1H330JCN	C.CAPACITOR CH 50V 33P	1	
C341		ECUM1H560JCN	C.CAPACITOR CH 50V 56P	1	
C342		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C343		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	1	
C344		ECUM1E104KBN	C.CAPACITOR CH 25V 0.1U	1	
C345		ECEA1HKA2R2	E.CAPACITOR 50V 2.2U	1	
C347		ECUM1E154KBM	C.CAPACITOR CH 25V 0.15U	1	
C348		ECUM1H332KBN	C.CAPACITOR CH 50V 3300P	1	
C349		ECEA1HKA010	E.CAPACITOR 50V 1U	1	
C350		ECUM1H333KBN	C.CAPACITOR CH 50V 0.033U	1	
C351		ECUM1H102KBN	C.CAPACITOR CH 50V 1000P	1	
C352		ECUM1H100DCN	C.CAPACITOR CH 50V 10P	1	
C353		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C354		ECUM1H390JCN	C.CAPACITOR CH 50V 39P	1	
C355		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C356		ECEA0JKA221	E.CAPACITOR 6.3V 220U	1	
C357		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C358,59		ECUM1E104KBN	C.CAPACITOR CH 25V 0.1U	2	
C360		ECUM1H223KBN	C.CAPACITOR CH 50V 0.022U	1	
C361		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C362		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C363		ECEA0JKA221	E.CAPACITOR 6.3V 220U	1	
C364		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C365		ECUM1H220JCN	C.CAPACITOR CH 50V 22P	1	
C366		ECUM1H270JCN	C.CAPACITOR CH 50V 27P	1	
C367-72		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	6	
C373		ECEA1HKA3R3	E.CAPACITOR 50V 3.3U	1	
C374		ECEA1EKN4R7	E.CAPACITOR 25V 4.7U	1	
C375		ECEA0JKA220	E.CAPACITOR 6.3V 220U	1	
C376		ECUM1H181JCN	C.CAPACITOR CH 50V 180P	1	
C378		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C379		ECEA0JKA221	E.CAPACITOR 6.3V 220U	1	
C380		ECEA0JKA470	E.CAPACITOR 6.3V 47U	1	
C381		ECUM1H270JCN	C.CAPACITOR CH 50V 27P	1	
C383		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C386		ECUM1H561JCN	C.CAPACITOR CH 50V 560P	1	
C387		ECUM1H151JCN	C.CAPACITOR CH 50V 150P	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
C391	ECEA1HKN010	E.CAPACITOR 50V 1U	1	
C392	ECUM1H681KBN	C.CAPACITOR CH 50V 680P	1	
C393	ECUM1H470JCN	C.CAPACITOR CH 50V 47P	1	
C394	ECUM1H1042FN	C.CAPACITOR CH 50V 0.1U	1	
C395	ECEA1CKA100	E.CAPACITOR 16V 10U	1	
C396	ECUM1H121JCN	C.CAPACITOR CH 50V 120P	1	
C397	ECCF1H560JC	C.CAPACITOR 50V 56P	1	
C0701-03	ECUX1H1032FV	C.CAPACITOR CH 50V 0.01U	3	
C0704	ECUX1H331JCV	C.CAPACITOR CH 50V 330P	1	
C0705	ECUX1H181JCV	C.CAPACITOR CH 50V 180P	1	
C0706	ECEA1HKA0R1	E.CAPACITOR 50V 0.1U	1	
C0707,08	ECUX1H1032FV	C.CAPACITOR CH 50V 0.01U	2	
C0709	ECUX1H120JCV	C.CAPACITOR CH 50V 12P	1	
C0710	ECUX1H470JPV	C.CAPACITOR CH 50V 47P	1	
C0711	ECEA1CKA100	E.CAPACITOR 16V 10U	1	
C0712	ECUX1H1032FV	C.CAPACITOR CH 50V 0.01U	1	
C0714	ECQB1H473JF	P.CAPACITOR 50V 0.047U	1	
C0715	ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	1	
C0716	ECEA1CKA100	E.CAPACITOR 16V 10U	1	
C0717	ECUX1H270JPV	C.CAPACITOR CH 50V 27P	1	
C0718	ECEA1HKAR47	E.CAPACITOR 50V 0.47U	1	
C0719	ECUX1H270JCV	C.CAPACITOR CH 50V 27P	1	
C0720	ECUX1H1032FV	C.CAPACITOR CH 50V 0.01U	1	
C0721,22	ECUX1H390JCV	C.CAPACITOR CH 50V 39P	2	
C0723	ECEA1HKA0R1	E.CAPACITOR 50V 0.1U	1	
C0724	ECQB1H473JF	P.CAPACITOR 50V 0.047U	1	
C0726	ECUX1H1032FV	C.CAPACITOR CH 50V 0.01U	1	
C0729	ECEA1CKA100	E.CAPACITOR 16V 10U	1	
C0732	ECUX1H1032FV	C.CAPACITOR CH 50V 0.01U	1	
C851	ECEA1CKA100	E.CAPACITOR 16V 10U	1	
C852,53	ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	2	
C854	ECEA1HKA0R1	E.CAPACITOR 50V 0.1U	1	
C855,56	ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	2	
C857	ECEA1HKA0R1	E.CAPACITOR 50V 0.1U	1	
C858	ECUM1H472KBN	C.CAPACITOR CH 50V 4700P	1	
C859	ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	1	
C860	ECEA1HKA4R7	E.CAPACITOR 50V 4.7U	1	
C861	ECEA1HKA010	E.CAPACITOR 50V 1U	1	
C862,63	ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	2	
C864	ECEA1CKA100	E.CAPACITOR 16V 10U	1	
C865	ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	1	
C867	ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	1	
C1004	ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	1	
C1005	ECEA0JKA220	E.CAPACITOR 6.3V 220U	1	
C1006	ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C1007	ECEA0JKA101	E.CAPACITOR 6.3V 100U	1	
C1008	ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	1	
C1009	ECEA0JKA220	E.CAPACITOR 6.3V 22U	1	
C1010	ECEA0JKA101	E.CAPACITOR 6.3V 100U	1	
C1011	ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	1	
C1012	ECEA0JKA101	E.CAPACITOR 6.3V 100U	1	
C1013	ECEA0JKA220	E.CAPACITOR 6.3V 22U	1	
C1101	ECK◎WS102MEH	C.CAPACITOR	1	(!)
C1104	ECK◎WS102MLH	C.CAPACITOR	1	(!)
C1106	ECQE6104KF	P.CAPACITOR 630V 0.1U	1	
C1107	ECK◎WS102MEH	C.CAPACITOR	1	(!)
C1110,11	ECQU2A104MNB	P.CAPACITOR 100V 0.1U	2	(!)
C1112	ECEC2GG330	E.CAPACITOR 400V 33U	1	
C1113	ECKD2H103PU	C.CAPACITOR 500V 0.01U	1	
C1114	ECCD3A470KGE	C.CAPACITOR 1KV 47P	1	
C1115	ECA1VXLV470	E.CAPACITOR 35V 47U	1	
C1116	ECA1CXLV470	E.CAPACITOR 16V 47U	1	
C1117	ECQV1H104JM	P.CAPACITOR 50V 0.1U	1	
C1118	ECUM1H102KBN	C.CAPACITOR CH 50V 1000P	1	
C1120	ECQB1H332JF	P.CAPACITOR 50V 3300P	1	
C1121	ECUM1H391KBN	C.CAPACITOR CH 50V 390P	1	
C1131	EEUFA1E331	E.CAPACITOR 25V 330P	1	
C1132	ECEA1EU221	E.CAPACITOR 25V 220U	1	
C1133	ECKD2H101KB	C.CAPACITOR 500V 100P	1	
C1134	EEUFA1A122B	.CAPACITOR V	1	[SUPPLIED FROM MBV]
C1135	ECEA1AU331	E.CAPACITOR 10V 330U	1	
C1136	ECKD2H101KB	C.CAPACITOR 500V 100P	1	
C1137	ECA1HFQ560B	E.CAPACITOR	1	[SUPPLIED FROM MBV]
C1138	ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C1139	ECKD2H101KB	C.CAPACITOR 500V 100P	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
C1140	ECA1VFQ560	E.CAPACITOR 35V 56U	1	
C1141	ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C1142	ECKD2H101KB	C.CAPACITOR 500V 100P	1	
C1143	ECA0JFQ221	E.CAPACITOR 6.3V 220U	1	
C1144,45	ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	2	
C1147	ECUM1H471KBN	C.CAPACITOR CH 50V 470P	1	
C1148	ECQV1H684JL	P.CAPACITOR 50V 0.68U	1	
C1149	ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C1150	ECA1CM101	E.CAPACITOR 16V 100U	1	
C1151	ECEA1EGE470	E.CAPACITOR 25V 47U	1	
C2004	ECEA0JKA470	E.CAPACITOR 6.3V 47U	1	
C2005	ECQV1H683JM	P.CAPACITOR 50V 0.068U	1	
C2006	ECEA1CKA100	E.CAPACITOR 16V 10U	1	
C2007	ECEA0JKA221	E.CAPACITOR 6.3V 220U	1	
C2008	ECUM1H222KBN	C.CAPACITOR CH 50V 2200P	1	
C2009	ECUM1H471JCN	C.CAPACITOR CH 50V 470P	1	
C2010,11	ECEA1EKN3R3	E.CAPACITOR 25V 3.3U	2	
C2012	ECEA1EKA4R7	E.CAPACITOR 25V 4.7U	1	
C2013	ECEA1AKS221	E.CAPACITOR 10V 220U	1	
C2014	ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C2015	ECUM1H472KBN	C.CAPACITOR CH 50V 4700P	1	
C2016	ECUM1H392KBN	C.CAPACITOR CH 50V 3900P	1	
C2019	ECUM1H222KBN	C.CAPACITOR CH 50V 2200P	1	
C2021	ECUM1H1042FN	C.CAPACITOR CH 50V 0.1U	1	
C2022	ECUM1H223KBN	C.CAPACITOR CH 50V 0.022U	1	
C2024,25	ECUM1C105ZFN	C.CAPACITOR CH 16V 1U	2	
C2030	ECUM1H102KBN	C.CAPACITOR CH 50V 1000P	1	
C2032-34	ECUM1H102KBN	C.CAPACITOR CH 50V 1000P	3	
C3006	ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C3007	ECEA0JKA221	E.CAPACITOR 6.3V 220U	1	
C3008	ECUM1H102KBN	C.CAPACITOR CH 50V 1000P	1	
C3009	ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	1	
C3010	ECUM1C105ZFN	C.CAPACITOR CH 16V 1U	1	
C3012	ECEA0JKA330	E.CAPACOTOR 6.3V 33U	1	
C3013,14	ECUM1H102JCN	C.CAPACITOR CH 50V 1000P	2	
C3016	ECUM1H102KBN	C.CAPACITOR CH 50V 1000P	1	
C3018	ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C3020	ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C3021	ECA0JM471	E.CAPACITOR 6.3V 470U	1	
C3022	ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C3023	ECEA1CKA470	E.CAPACITOR 16V 47U	1	
C3024	ECKF1H103ZF	C.CAPACITOR 50V 0.01U	1	
C3027	ECEA0JKA470	E.CAPACITOR 6.3V 47U	1	
C3028	ECUM1H151JCN	C.CAPACITOR CH 50V 150P	1	
C3029	ECUM1H220JCN	C.CAPACITOR CH 50V 22P	1	
C3031	ECUM1H220JCN	C.CAPACITOR CH 50V 22P	1	
C3032	ECUM1H681JCN	C.CAPACITOR CH 50V 680P	1	
C3033	ECUM1H330JCN	C.CAPACITOR CH 50V 33P	1	
C3040	ECUM1H392KBN	C.CAPACITOR CH 50V 3900P	1	
C3041	ECUM1H1042FN	C.CAPACITOR CH 50V 0.1U	1	
C3042,43	ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	2	
C3045	ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C3046,47	ECUM1H102JCN	C.CAPACITOR CH 50V 1000P	2	
C3051	ECUM1H152KBN	C.CAPACITOR CH 50V 1500P	1	
C3052,53	ECEA0JKA470	E.CAPACITOR 6.3V 47U	2	
C3054	ECUM1C105ZFN	C.CAPACITOR CH 16V 1U	1	
C3055	ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C3057	ECUM1H180JCN	C.CAPACITOR CH 50V 18P	1	
C3062	ECEA1CKA470	E.CAPACITOR 16V 47U	1	
C4004	ECUM1H102JCN	C.CAPACITOR CH 50V 1000P	1	
C4008	ECUM1H101JCN	C.CAPACITOR CH 50V 100P	1	
C4010	ECUM1H1042FN	C.CAPACITOR CH 50V 0.1U	1	
C4015	ECUM1H182JCN	C.CAPACITOR CH 50V 1800P	1	
C4016	ECEA1CU330	E.CAPACITOR 16V 33U	1	
C4017	ECUM1H102JCN	C.CAPACITOR CH 50V 1000P	1	
C4018	ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	1	
C4019	ECEA1HU010	E.CAPACITOR 50V 1U	1	
C4020	ECEA1HKA0R1	E.CAPACITOR 50V 0.1U	1	
C4021	ECEA1CKA330	E.CAPACITOR 16V 33U	1	
C4022	ECEA1HKA0R1	E.CAPACITOR 50V 0.1U	1	
C4023	ECUM1H471JCN	C.CAPACITOR CH 50V 470P	1	
C4024	ECEA1HKA0R1	E.CAPACITOR 50V 0.1U	1	
C4025	ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	1	
C4026	ECEA1CKA470	E.CAPACITOR 16V 47U	1	
C4027	ECEA1CKA100	E.CAPACITOR 16V 10U	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C4028		ECEA1EKA4R7	E.CAPACITOR 25V 4.7U	1	
C4030		ECUM1H153KBN	C.CAPACITOR CH 50V 0.015U	1	
C4031		ECUM1H682KBN	C.CAPACITOR CH 50V 6800P	1	
C4032		ECEA1HKA010	E.CAPACITOR 50V 1U	1	
C4033		ECUM1H102JCN	C.CAPACITOR CH 50V 1000P	1	
C4036-38		ECEA1CKA100	E.CAPACITOR 16V 10U	3	
C4040		ECUM1H471JCN	C.CAPACITOR CH 50V 470P	1	
C4041		ECUM1H102JCN	C.CAPACITOR CH 50V 1000P	1	
C4042		ECUM1H471JCN	C.CAPACITOR CH 50V 470P	1	
C4043		ECUM1H220JCN	C.CAPACITOR CH 50V 22P	1	
C4044		ECEA1HKA010	E.CAPACITOR 50V 1U	1	
C4045		ECEA1CKA330	E.CAPACITOR 16V 33U	1	
C4046		ECEA1CKA100	E.CAPACITOR 16V 10U	1	
C5001		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C5003		ECUM1C224ZFN	C.CAPACITOR CH 16V 0.22U	1	
C5004		ECEA0JKA220	E.CAPACITOR 6.3V 220U	1	
C5005		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C6006		ECEA0JKA470	E.CAPACITOR 6.3V 47U	1	
C6007		ECQV1H334JM	P.CAPACITOR 50V 0.33U	1	
C6009,10		ECUM1H270JCN	C.CAPACITOR CH 50V 27P	2	
C6013		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C6016-19		ECUM1H271JCN	C.CAPACITOR CH 50V 270P	4	
C6020		ECEA1CKA100	E.CAPACITOR 16V 10U	1	
C6021		ECEA0JKA101	E.CAPACITOR 6.3V 100U	1	
C6023,24		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	2	
C6027,28		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	2	
C7601		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C7602		ECQV1H104JM	P.CAPACITOR 50V 0.1U	1	
C7603		ECEA1CKA101	E.CAPACITOR 16V 100U	1	
C7604		ECEA0JKA101	E.CAPACITOR 6.3V 100U	1	
C7605		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C7606		ECEA1CKA101	E.CAPACITOR 16V 100U	1	
C7607		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C7608		ERJ6GMJ0R00	M.RESISTOR CH 1/10W 0	1	
C7609		ECEA0JKA101	E.CAPACITOR 6.3V 100U	1	
C7610,11		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	2	
C7612		ECEA0JKA101	E.CAPACITOR 6.3V 100U	1	
C7613		ECUM1H180JCN	C.CAPACITOR CH 50V 18P	1	
C7614		ECEA1HKA100	E.CAPACITOR 50V 10U	1	
C7615		ECEA1HKA010	E.CAPACITOR 50V 1U	1	
C7616		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
D301		1SS283	DIODE	1	
D302		1SS254	DIODE	1	
D304		1SS254	DIODE	1	
D305		MA723VT	DIODE	1	
D307		1SS254	DIODE	1	
D309-12		1SS254	DIODE	4	
D316		1SS254	DIODE	1	
D319		1SS254	DIODE	1	
D1001		MA4051-L	DIODE	1	
D1004		MA4051-L	DIODE	1	
D1005		1SS355	DIODE	1	
D1007,08		1SS355	DIODE	2	
D1102		ERA15-08	DIODE	1	
D1103		AF01C	DIODE	1	
D1104		MA178	DIODE	1	
D1105-07		ERA15-08	DIODE	3	
D1108		RD100E	DIODE	1	
D1109,10		ERA15-08	DIODE	2	
D1121		RL22	DIODE	1	
D1122		11EQS04	DIODE	1	
D1123		ERA22-02	DIODE	1	
D1124		MA185	DIODE	1	
D1125		11EQS04	DIODE	1	
D1126		MA4047M	DIODE	1	
D1127		1SS355	DIODE	1	
D1129		MA4043-L	DIODE	1	
D2003		MA153	DIODE	1	
D2004		1SS355	DIODE	1	
D2005		MA151K	DIODE	1	
D2007		1SS355	DIODE	1	
D3001		1SS355	DIODE	1	
D3007		1SS254	DIODE	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
D3011,12		1SS355	DIODE	2	
D3014-17		1SS355	DIODE	4	
D4005		1SS254	DIODE	1	
D4007		1SS254	DIODE	1	
D4009		1SS254	DIODE	1	
D4012		1SS254	DIODE	1	
D4014		1SS254	DIODE	1	
D4015		1SS355	DIODE	1	
D4016		MA700A	DIODE	1	
D5001		LN59L.VT	LED	1	
D6002,03		1SS254	DIODE	2	
D6004		1SS355	DIODE	1	
D6005		1SS254	DIODE	1	
D6007		MA4075-L	DIODE	1	
D6009		MA151K	DIODE	1	
D6010		1SS254	DIODE	1	
D6011		MA700A	DIODE	1	
D7601		MA4300M	DIODE	1	
D7602		1SS355	DIODE	1	
D7603		MA151K	DIODE	1	
F1101		XRA2C16TH15	FUSE	1	<!>
IC301		TL8850P	IC	1	
IC302		AN3554NFBP	IC	1	[SUPPLIED FROM MBV]
IC0701		LA7576	IC	1	
IC051		TA1225N	IC	1	[SUPPLIED FROM MBV]
IC1001		HA17431PA	IC	1	
IC1101		TDA4605-3	IC	1	<!>
IC1102		SI3120C	IC	1	
IC2001		XRA6887-V3	IC	1	
IC4002		LA7285	IC	1	
IC4003		NM1111XFF	IC	1	
IC6001		MN6755486H3S	IC	1	[SUPPLIED FROM MBV]
IC6002,03		ON1387	PHOTO INTERRUPTER	2	
K303,04		ERJ6GMJ0R00	M.RESISTOR CH 1/10W 0	2	
K308		ERJ6GMJ0R00	M.RESISTOR CH 1/10W 0	1	
K0702,03		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	2	
K0706		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
K3004		ERJ6GMJ0R00	M.RESISTOR CH 1/10W 0	1	
K3011-13		ERJ6GMJ0R00	M.RESISTOR CH 1/10W 0	3	
K3015		ERJ6GMJ0R00	M.RESISTOR CH 1/10W 0	1	
K3019		ERJ6GMJ0R00	M.RESISTOR CH 1/10W 0	1	
K3027		ERJ6GMJ0R00	M.RESISTOR CH 1/10W 0	1	
K4005		ERJ6GMJ0R00	M.RESISTOR CH 1/10W 0	1	
K4011		ERJ6GMJ0R00	M.RESISTOR CH 1/10W 0	1	
K4016		ERJ6GMJ0R00	M.RESISTOR CH 1/10W 0	1	
K4022		ERJ6GMJ0R00	M.RESISTOR CH 1/10W 0	1	
K4027		ERJ6GMJ0R00	M.RESISTOR CH 1/10W 0	1	
K4029		ERJ6GMJ0R00	M.RESISTOR CH 1/10W 0	1	
K4031		ERJ6GMJ0R00	M.RESISTOR CH 1/10W 0	1	
K4035		ERJ6GMJ0R00	M.RESISTOR CH 1/10W 0	1	
K6015-17		ERJ6GMJ0R00	M.RESISTOR CH 1/10W 0	3	
K7604		ERJ6GMJ0R00	M.RESISTOR CH 1/10W 0	1	
K7620		ERJ6GMJ0R00	M.RESISTOR CH 1/10W 0	1	
L301		VLQ0599J470	COIL 47UH	1	
L302		VLQ0599J100	COIL 10UH	1	
L303		VLQ0599J270	COIL 27UH	1	
L304		VLQ0599J100	COIL 10UH	1	
L305		VLQ0599J680	COIL 68UH	1	
L306,07		VLQ0599J390	COIL 39UH	2	
L308		VLQ0599J150	COIL 15UH	1	
L310		VLQ0599J121	COIL 120UH	1	
L311		VLQ0599J101	COIL 100UH	1	
L312		VLQ0599J8R2	COIL 8.2UH	1	
L313		VLQ0599J680	COIL 68UH	1	
L314		VLQ0599J220	COIL 22UH	1	
L315		VLQ0599J101	COIL 100UH	1	
L316		VLQ0599J470	COIL 47UH	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
L317	VLQ0599J101	COIL 100UH	1	
L318	VLQ0599J680	COIL 68UH	1	
L319	VLQ0599J270	COIL 27UH	1	
L320	VLP0125	COIL	1	
L322	ERJ6GMZ0R00	M.RESISTOR CH 1/10W 0	1	
L323-28	VLP0145	COIL	6	
L330-33	VLP0145	COIL	4	
L334	VLQ0599J390	COIL 39UH	1	
L0701	VLQ01G3JR22	COIL	1	
L0706	VLQEL05S8R2K	COIL	1	
L0707	ELJFA100KB	COIL	1	
L851,52	VLQ0599J680	COIL 68UH	2	
L853-57	ERJ6GMZ0R00	M.RESISTOR CH 1/10W 0	5	
L1107	ELF18D290A	COIL 29UH	1	<!>
L1108	ELF18D221F	COIL 220UH	1	<!>
L1109	VLP0074	COIL	1	
L1110	VLP0085	COIL	1	
L1121	VLQ0611K220	COIL 22UH	1	
L1122	ELELN220KA	COIL 22UH	1	
L1123,24	VLQEL05S101K	COIL 100UH	2	
L3001	VLQ0599J3R3	COIL 3.3UH	1	
L3003	VLQ0599J6R8	COIL 6.8UH	1	
L3004	VLQ0599J120	COIL 120UH	1	
L3006	VLQ0599J101	COIL 100UH	1	
L3007	VLQ0599J680	COIL 68UH	1	
L3009	VLQ0599J680	COIL 68UH	1	
L3011	VLQ0599J680	COIL 68UH	1	
L3012	VLP0145	COIL	1	
L3013	ERJ6GMZ0R00	M.RESISTOR CH 1/10W 0	1	
L4001	VLQ0636	COIL H	1	
L6001,02	VLQ0599J680	COIL 68UH	2	
L6003	VLQEL05S101K	COIL 100UH	1	
L6004	VLP0083	COIL	1	
L7602	VLQ0599J1R0	COIL 1UH	1	
L7603-05	VLQ0599J680	COIL 68UH	3	
L7606	VLQ0599J2R2	COIL 2.2UH	1	[SUPPLIED FROM MBV]
L7607,08	VLQ0599J680	COIL 68UH	2	
P051	VJR0777B011W	CONNECTOR	1	
P1101	VJS3306	AC INLET	1	<!>
P2001	VJS3316A002	CONNECTOR (FEMALE) 2P	1	
P3002	VJS3537A014G	CONNECTOR (FEMALE) 14P	1	
P4001	VJS3537A006G	CONNECTOR	1	[SUPPLIED FROM MBV]
P6001	VJS3537A032G	CONNECTOR (FEMALE) 32P	1	
P6004	VJS3820	CONNECTOR	1	
PK0701	VJR0816A010W	CONNECTOR 10P	1	
PP2001	VJP3042A017W	CONNECTOR (MALE) 17P	1	
PP2002	VJP3042A011W	CONNECTOR (MALE) 11P	1	
PP3901	VJP3042C020W	CONNECTOR (MALE)	1	[SUPPLIED FROM MBV]
PP3902	VJP3042A018W	CONNECTOR (MALE) 18P	1	
PP4004	VJP3043A010W	CONNECTOR (MALE) 10P	1	
PP4005	VJP3043A009W	CONNECTOR (MALE) 9P	1	
PP6005	VJP3043A003W	CONNECTOR (MALE) 3P	1	
PR1101	VSF0015A10	IC PROTECTER	1	<!>
PS301	VJR0776B009W	CONNECTOR (MALE) 9P	1	
PS302	VJR0776B015W	CONNECTOR (MALE) 15P	1	[SUPPLIED FROM MBV]
PS303	VJR0776B008W	CONNECTOR 8P	1	
Q301,02	MSD601	TRANSISTOR	2	
Q303,04	MSC2295	TRANSISTOR	2	
Q305	MSB709	TRANSISTOR	1	
Q0701	MSD601-S	TRANSISTOR	1	
Q1001	2SD601A	TRANSISTOR	1	
Q1002,03	2SD1996-S	TRANSISTOR	2	
Q1004	2SD1996	TRANSISTOR	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
Q1005	2SD602A	TRANSISTOR	1	
Q1007	MSD602	TRANSISTOR	1	
Q1101	STP3N60FI-M	TRANSISTOR	1	<!>
Q1102	2SD601A	TRANSISTOR	1	
Q1104	2SB1321A	TRANSISTOR	1	
Q1105	2SD601A	TRANSISTOR	1	
Q1107	M0C8104FR2	TRANSISTOR	1	<!>
Q1111	M0C8104FR2	TRANSISTOR	1	<!>
Q3002	2SB709	TRANSISTOR	1	
Q3003	2SB709A	TRANSISTOR	1	
Q3004	MSD601	TRANSISTOR	1	
Q3005	MSC2295	TRANSISTOR	1	
Q3008	2SD1996	TRANSISTOR	1	
Q3009	2SB1322	TRANSISTOR	1	
Q3010	MSB709	TRANSISTOR	1	
Q3011	2SD601A	TRANSISTOR	1	
Q3012	2SB1322	TRANSISTOR	1	
Q3013	MSB709	TRANSISTOR	1	
Q3014	MSD601	TRANSISTOR	1	
Q3016,17	MSC2295	TRANSISTOR	2	
Q3018-20	MSD601	TRANSISTOR	3	
Q3021	MSB709	TRANSISTOR	1	
Q3023	MSC2295	TRANSISTOR	1	
Q4001	2SD601-R	TRANSISTOR	1	
Q6001	MSB709	TRANSISTOR	1	
Q6002	PN205L-NC.VT	PHOTO TRANSISTOR	1	
Q7601	2SB709A-R	TRANSISTOR	1	
Q7602	2SD601-R	TRANSISTOR	1	
QR302	MUN2212	TRANSISTOR-RESISTOR	1	
QR303	MUN2213	TRANSISTOR RESISTOR	1	
QR305	MUN2212	TRANSISTOR-RESISTOR	1	
QR306	MUN2213	TRANSISTOR-RESISTOR	1	
QR308	IMH5	TRANSISTOR-RESISTOR	1	
QR310	MUN2213	TRANSISTOR-RESISTOR	1	
QR312	MUN2113	TRANSISTOR-RESISTOR	1	
QR316	MUN2213	TRANSISTOR-RESISTOR	1	
QR320	XN1212	TRANSISTOR-RESISTOR	1	
QR322	MUN2213	TRANSISTOR-RESISTOR	1	
QR1001,02	MUN2113	TRANSISTOR-RESISTOR	2	
QR1101	UNZ114	TRANSISTOR-RESISTOR	1	
QR1102,03	MUN2213	TRANSISTOR-RESISTOR	2	
QR1104	MUN2212	TRANSISTOR-RESISTOR	1	
QR1105,06	MUN2213	TRANSISTOR-RESISTOR	2	
QR3001	MUN2111	TRANSISTOR-RESISTOR	1	
QR3002,03	DTC363EK	TRANSISTOR-RESISTOR	2	
QR3005	UN2211	TRANSISTOR-RESISTOR	1	
QR3007	MUN2111	TRANSISTOR-RESISTOR	1	
QR3008-18	MUN2212	TRANSISTOR-RESISTOR	11	
QR3019	XN4213	TRANSISTOR RESISTOR	1	
QR3020	MUN2212	TRANSISTOR-RESISTOR	1	
QR3021	MUN2211	TRANSISTOR-RESISTOR	1	
QR3023	MUN2213	TRANSISTOR-RESISTOR	1	
QR3026,27	MUN2113	TRANSISTOR-RESISTOR	2	
QR4007	MUN2212	TRANSISTOR-RESISTOR	1	
QR6001	XN1211	TRANSISTOR-RESISTOR	1	
QR6002	XN1213	TRANSISTOR-TRANSISTOR	1	
QR6004	UN2114	TRANSISTOR-RESISTOR	1	
QR6005	MUN2113	TRANSISTOR-RESISTOR	1	
QR6009	MUN2112	TRANSISTOR-RESISTOR	1	
QR6010	XN1211	TRANSISTOR-RESISTOR	1	
QR6012	MUN2211	TRANSISTOR-RESISTOR	1	
QR6013	MUN2113	TRANSISTOR-RESISTOR	1	
QR7601	MUN2213	TRANSISTOR-RESISTOR	1	
R301,02	ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	2	
R303	ERJ6GMYJ272	M.RESISTOR CH 1/10W 2.7K	1	
R304	ERJ6GMYJ182	M.RESISTOR CH 1/10W 1.8K	1	
R305	ERJ6GMYJ681	M.RESISTOR CH 1/10W 680	1	
R306	ERJ6GMYJ821	M.RESISTOR CH 1/10W 820	1	
R307	ERJ6GMYK225	M.RESISTOR CH 1/10W 2.2M	1	
R308	ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R310	ERJ6GMYJ681	M.RESISTOR CH 1/10W 680	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R311		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R312		ERJ6GMYJ122	M.RESISTOR CH 1/10W 1.2K	1	
R313,14		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	2	
R315		ERJ6GMYJ684	M.RESISTOR CH 1/10W 680K	1	
R316		ERJ6GMYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R317		ERJ6GMYG221	M.RESISTOR CH 1/10W 220	1	
R318		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R319		ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R320		ERJ6GMYJ682	M.RESISTOR CH 1/10W 6.8K	1	
R321		ERJ6GMZOR00	M.RESISTOR CH 1/10W 0	1	
R324		ERJ6GMYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R325		ERJ6GMYJ562	M.RESISTOR CH 1/10W 5.6K	1	
R326		ERJ6GMYJ122	M.RESISTOR CH 1/10W 1.2K	1	
R327		ERJ6GMYJ473	M.RESISTOR CH 1/10W 47K	1	
R328		ERJ6GMYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R329		ERJ6GMYG471	M.RESISTOR CH 1/10W 470	1	
R330		ERJ6GMYJ333	M.RESISTOR CH 1/10W 33K	1	
R331		ERJ6GMYJ473	M.RESISTOR CH 1/10W 47K	1	
R332		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R334		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R336		ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R337		ERJ6GMYG201	M.RESISTOR CH 1/10W 200	1	
R339		ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R340		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R341		ERJ6GMYJ101	M.RESISTOR CH 1/10W 100	1	
R342,43		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	2	
R344		ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	1	
R345		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R346		ERJ6GMYJ473	M.RESISTOR CH 1/10W 47K	1	
R347,48		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	2	
R349		ERJ6GMYJ272	M.RESISTOR CH 1/10W 2.7K	1	
R350		ERJ6GMYK225	M.RESISTOR CH 1/10W 2.2M	1	
R351		ERJ6GMZOR00	M.RESISTOR CH 1/10W 0	1	
R353		ERJ6GMZOR00	M.RESISTOR CH 1/10W 0	1	
R359		ERJ6GMYJ124	M.RESISTOR CH 1/10W 120K	1	
R361		ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	1	
R362		ERJ6GMZOR00	M.RESISTOR CH 1/10W 0	1	
R363		ERJ6GMYJ183	M.RESISTOR CH 1/10W 18K	1	
R364		ERJ6GMYJ392	M.RESISTOR CH 1/10W 3.9K	1	
R367		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R369		ERJ6GMYJ393	M.RESISTOR CH 1/10W 39K	1	
R371		ERJ6GMZOR00	M.RESISTOR CH 1/10W 0	1	
R372		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R373		ERJ6GMYJ334	M.RESISTOR CH 1/10W 330K	1	
R375		ERDS2TJ272	C.RESISTOR 1/4W 2.7K	1	
R376		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R377		ERJ6GMYJ681	M.RESISTOR CH 1/10W 680	1	
R378		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
RO702		ERJ3GEYJ272	M.RESISTOR CH 1/16W 2.7K	1	
RO703		ERJ3GEYJ152	M.RESISTOR CH 1/16W 1.5K	1	
RO704		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
RO705		ERJ3GEYJ562	M.RESISTOR CH 1/16W 5.6K	1	
RO706,07		ERJ3GEYJ272	M.RESISTOR CH 1/16W 2.7K	2	
RO708		ERJ3GEYJ152	M.RESISTOR CH 1/16W 1.5K	1	
RO709		ERJ3GEYJ105	M.RESISTOR CH 1/16W 1M	1	
RO710		ERJ6GEYJ154	M.RESISTOR CH 1/10W 150K	1	
RO713		ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	1	
RO714		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
RO715		ERJ3GEYJ183	M.RESISTOR CH 1/16W 18K	1	
RO716		VRE0040E151	M.RESISTOR CH 1/10W 150	1	
RO717		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
RO718		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
RO719		ERJ6GEYJ822	M.RESISTOR CH 1/10W 8.2K	1	
RO720		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
RO721		ERJ3GEYJ331	M.RESISTOR CH 1/16W 330	1	
RO722		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
RO723		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
RO724		ERJ3GEYJ183	M.RESISTOR CH 1/16W 18K	1	
RO725		ERJ3GEYJ182	M.RESISTOR CH 1/16W 1.8K	1	
RO726		ERJ3GEYG112	M.RESISTOR CH 1/16W 1.1K	1	
RO727		ERJ3GEYG821	M.RESISTOR CH 1/16W 820	1	
RO732		ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	1	
RO783		ERJ3GEYJ393	M.RESISTOR CH 1/16W 39K	1	
R852		ERJ6GMYJ821	M.RESISTOR CH 1/10W 820	1	
R853		ERJ6GMYJ203	M.RESISTOR CH 1/10W 20K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R1001		ERJ6GMYJ333	M.RESISTOR CH 1/10W 33K	1	
R1002		ERDS2TJ561	C.RESISTOR 1/4W 560	1	
R1003		ERJ6GMYG272	M.RESISTOR CH 1/10W 2.7K	1	
R1004		ERJ6GMYJ114	M.RESISTOR CH 1/10W 110K	1	
R1005		ERJ6GMYG272	M.RESISTOR CH 1/10W 2.7K	1	
R1006		ERJ6GMYJ122	M.RESISTOR CH 1/10W 1.2K	1	
R1007		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R1008		ERJ6GMYJ333	M.RESISTOR CH 1/10W 33K	1	
R1009,10		ERJ6GMYJ562	M.RESISTOR CH 1/10W 5.6K	2	
R1102,03		ERDS1TJ183	C.RESISTOR 1/2W 18K	2	
R1104		ERJ6GMYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R1107		ERJ6GMYJ164	M.RESISTOR CH 1/10W 160K	1	
R1108		ERJ6GMYJ105	M.RESISTOR CH 1/10W 1M	1	
R1109		ERJ6GMYJ221	M.RESISTOR CH 1/10W 220	1	
R1110		ERJ6GMYJ362	M.RESISTOR CH 1/10W 3.6K	1	
R1111		ERDS2FJ102	C.RESISTOR 1/4W 1K	1	
R1112		ERJ8GEYJ304	M.RESISTOR CH 1/8W 300K	1	
R1113		ERJ8GEYJ434	M.RESISTOR CH 1/8W 430K	1	
R1114		ERX12SJR51	M.RESISTOR 1/2W 0.51	1	
R1115		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R1116		ERJ6GMYJ100	M.RESISTOR CH 1/10W 10	1	
R1117		ERJ6GMYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R1118		ERJ8GEY0R00	M.RESISTOR CH 1/8W 0	1	
R1119		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R1120		ERJ6GMYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R1122		ERG12AGM334	S.RESISTOR 1/2W 330K	1	
R1123		ERJ6GMZOR00	M.RESISTOR CH 1/10W 0	1	
R1125		ERJ6GMYJ220	M.RESISTOR CH 1/10W 22	1	
R1126		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R1127		ERJ6GMYJ333	M.RESISTOR CH 1/10W 33K	1	
R1128		ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R1129		ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	1	
R1131		ERJ6GMYG620	M.RESISTOR CH 1/10W 62	1	[SUPPLIED FROM NBV]
R1132		ERJ6GMYG302	M.RESISTOR CH 1/10W 3K	1	
R1134		ERJ6GMYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R1135		ERJ8GEYJ274	M.RESISTOR CH 1/8W 270K	1	
R1136		ERJ8GEYJ394	M.RESISTOR CH 1/8W 390K	1	
R2001		ERJ6GMYG512	M.RESISTOR CH 1/10W 5.1K	1	
R2002		ERJ6GMYG913	M.RESISTOR CH 1/10W 91K	1	
R2003		ERDS2FJ7R5	C.RESISTOR 1/4W 7.5	1	
R2004		ERDS2TJ102	C.RESISTOR 1/4W 1K	1	
R2005,06		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	2	
R2007		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R2008		ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R2009		ERDS2FJ7R5	C.RESISTOR 1/4W 7.5	1	
R2010		ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R2011		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R2012		ERDS2FJ6R8	C.RESISTOR 1/4W 6.8	1	
R2013		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R2014		ERJ6GMYJ221	M.RESISTOR CH 1/10W 220	1	
R2015		ERJ6GMYJ471	M.RESISTOR CH 1/10W 470	1	
R2016		ERDS2FJ6R8	C.RESISTOR 1/4W 6.8	1	
R2017		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R2023,24		ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	2	
R2026,27		ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	2	
R2028		ERJ6GMYJ272	M.RESISTOR CH 1/10W 2.7K	1	
R2040		ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R2041		ERJ6GMYJ562	M.RESISTOR CH 1/10W 5.6K	1	
R2042		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R2045		ERJ6GMZOR00	M.RESISTOR CH 1/10W 0	1	
R3004		ERJ6GMYJ272	M.RESISTOR CH 1/10W 2.7K	1	
R3005		ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R3006		ERDS2TJ471	C.RESISTOR 1/4W 470	1	
R3011		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R3012		ERJ6GMYJ473	M.RESISTOR CH 1/10W 47K	1	
R3013		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R3014		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R3017		ERJ6GMYJ333	M.RESISTOR CH 1/10W 33K	1	
R3022		ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	1	
R3023,24		ERJ6GMYJ821	M.RESISTOR CH 1/10W 820	2	
R3025		ERJ6GMYJ122	M.RESISTOR CH 1/10W 1.2K	1	
R3026		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R3027		ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	1	
R3028		ERJ6GMYJ471	M.RESISTOR CH 1/10W 470	1	
R3029		ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
R3030	ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R3031	ERJ6GMZ0R00	M.RESISTOR CH 1/10W 0	1	
R3034	ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R3037-39	ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	3	
R3040	ERJ6GMYJ122	M.RESISTOR CH 1/10W 1.2K	1	
R3041	ERJ6GMYJ561	M.RESISTOR CH 1/10W 560	1	
R3042	ERJ6GMYJ122	M.RESISTOR CH 1/10W 1.2K	1	
R3043	ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	1	
R3044	ERJ6GMYJ683	M.RESISTOR CH 1/10W 68K	1	
R3045	ERJ6GMYJ390	M.RESISTOR CH 1/10W 39	1	
R3046	ERJ6GMYJ473	M.RESISTOR CH 1/10W 47K	1	
R3047	ERJ6GMYJ333	M.RESISTOR CH 1/10W 33K	1	
R3048	ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R3049	ERJ6GMYG821	M.RESISTOR CH 1/10W 820	1	
R3050	ERJ6GMYG123	M.RESISTOR CH 1/10W 12K	1	
R3051	ERJ6GMYG512	M.RESISTOR CH 1/10W 5.1K	1	
R3052	ERJ6GMYG272	M.RESISTOR CH 1/10W 2.7K	1	
R3053	ERJ6GMYG302	M.RESISTOR CH 1/10W 3K	1	
R3054	ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R3055	ERJ6GMYJ823	M.RESISTOR CH 1/10W 82K	1	
R3056	ERJ6GMYJ473	M.RESISTOR CH 1/10W 47K	1	
R3057	ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R3058	ERJ6GMYG821	M.RESISTOR CH 1/10W 820	1	
R3059	ERJ6GMYG123	M.RESISTOR CH 1/10W 12K	1	
R3060	ERJ6GMYG512	M.RESISTOR CH 1/10W 5.1K	1	
R3061	ERJ6GMYG272	M.RESISTOR CH 1/10W 2.7K	1	
R3062	ERJ6GMYG302	M.RESISTOR CH 1/10W 3K	1	
R3063	ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R3064,65	ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	2	
R3066	ERJ6GMYJ561	M.RESISTOR CH 1/10W 560	1	
R3067	ERJ6GMYJ273	M.RESISTOR CH 1/10W 27K	1	
R3070	ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R3072	ERJ6GMYJ221	M.RESISTOR CH 1/10W 220	1	
R3073	ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R3076,77	ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	2	
R3079	ERJ6GMYJ334	M.RESISTOR CH 1/10W 330K	1	
R3080	ERJ6GMZ0R00	M.RESISTOR CH 1/10W 0	1	
R4003	ERJ6GMYJ221	M.RESISTOR CH 1/10W 220	1	
R4006,07	ERDS2TJ472	C.RESISTOR 1/4W 4.7K	2	
R4009	ERJ6GMZ0R00	M.RESISTOR CH 1/10W 0	1	
R4013	ERJ6GMYJ203	M.RESISTOR CH 1/10W 20K	1	
R4014	ERJ6GMYJ562	M.RESISTOR CH 1/10W 5.6K	1	
R4027	ERJ6GMYJ101	M.RESISTOR CH 1/10W 100	1	
R4028	ERJ6GMYJ123	M.RESISTOR CH 1/10W 12K	1	
R4029	ERJ6GMYJ682	M.RESISTOR CH 1/10W 6.8K	1	
R4030	ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R4031	ERJ6GMYJ271	M.RESISTOR CH 1/10W 270	1	
R4032	ERJ6GMYJ153	M.RESISTOR CH 1/10W 15K	1	
R4033	ERJ6GMYJ333	M.RESISTOR CH 1/10W 33K	1	
R4034	ERJ6GMYJ473	M.RESISTOR CH 1/10W 47K	1	
R4035	ERJ6GMYJ562	M.RESISTOR CH 1/10W 5.6K	1	
R4036	ERJ6GMYJ513	M.RESISTOR CH 1/10W 51K	1	
R4037	ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	1	
R4038	ERJ6GMYJ824	M.RESISTOR CH 1/10W 820K	1	
R4039	ERJ6GMYJ752	M.RESISTOR CH 1/10W 7.5K	1	
R4040	ERJ6GMYJ470	M.RESISTOR CH 1/10W 47	1	
R4042	ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	1	
R4043	ERJ6GMYJ392	M.RESISTOR CH 1/10W 3.9K	1	
R4044	ERJ6GMYJ474	M.RESISTOR CH 1/10W 470K	1	
R4046	ERJ6GMYJ752	M.RESISTOR CH 1/10W 7.5K	1	
R4047	ERJ6GMYJ822	M.RESISTOR CH 1/10W 8.2K	1	
R4049	ERJ6GMYJ682	M.RESISTOR CH 1/10W 6.8K	1	
R4050,51	ERJ6GMYG223	M.RESISTOR CH 1/10W 22K	2	
R4052	ERJ6GMYG103	M.RESISTOR CH 1/10W 10K	1	
R4053	ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R4054	ERJ6GMYJ101	M.RESISTOR CH 1/10W 100	1	
R4062,63	ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	2	
R4069,70	ERJ6GMYJ683	M.RESISTOR CH 1/10W 68K	2	
R4085	ERJ6GMYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R4088,89	ERJ8GEYJ222	M.RESISTOR CH 1/8W 2.2K	2	[SUPPLIED FROM MBV]
R6001	ERJ6GMYJ201	M.RESISTOR CH 1/10W 200	1	
R6002	ERJ6GMYG272	M.RESISTOR CH 1/10W 2.7K	1	
R6003	ERJ6GMYJ272	M.RESISTOR CH 1/10W 2.7K	1	
R6004	ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R6005	ERJ6GMYJ333	M.RESISTOR CH 1/10W 33K	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
R6006,07	ERJ6GMYJ683	M.RESISTOR CH 1/10W 68K	2	
R6008	ERJ6GMYJ272	M.RESISTOR CH 1/10W 2.7K	1	
R6009	ERJ6GMYJ333	M.RESISTOR CH 1/10W 33K	1	
R6010	ERDS2TJ333	C.RESISTOR 1/4W 33K	1	
R6011,12	ERJ6GMYG223	M.RESISTOR CH 1/10W 22K	2	
R6013	ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R6015	ERJ6GMZ0R00	M.RESISTOR CH 1/10W 0	1	
R6017	ERDS2TJ271	C.RESISTOR 1/4W 270	1	
R6018-20	ERJ6GMZ0R00	M.RESISTOR CH 1/10W 0	3	
R6021	ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R6022	ERJ6GMZ0R00	M.RESISTOR CH 1/10W 0	1	
R6023	ERJ6GMYJ101	M.RESISTOR CH 1/10W 100	1	
R6024	ERJ6GMYJ104	M.RESISTOR CH 1/10W 100K	1	
R6025	ERJ6GMYJ333	M.RESISTOR CH 1/10W 33K	1	
R6026	ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R6027	ERJ6GMZ0R00	M.RESISTOR CH 1/10W 0	1	
R6028	ERJ6GMYJ101	M.RESISTOR CH 1/10W 100	1	
R6029	ERDS2TJ103	C.RESISTOR 1/4W 10K	1	
R6030	ERJ6GMYJ101	M.RESISTOR CH 1/10W 100	1	
R6031	ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R6032	ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R6034,35	ERJ6GMYJ272	M.RESISTOR CH 1/10W 2.7K	2	
R6036	ERJ6GMZ0R00	M.RESISTOR CH 1/10W 0	1	
R6037,38	ERJ6GMYJ221	M.RESISTOR CH 1/10W 220	2	
R6039	ERJ6GMZ0R00	M.RESISTOR CH 1/10W 0	1	
R6040,41	ERJ6GMYJ272	M.RESISTOR CH 1/10W 2.7K	2	
R6042	ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R6043,44	ERJ6GMYJ221	M.RESISTOR CH 1/10W 220	2	
R6045	ERJ6GMYJ392	M.RESISTOR CH 1/10W 3.9K	1	
R6047-50	ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	4	
R6051	ERJ6GMYJ101	M.RESISTOR CH 1/10W 100	1	
R6052	ERJ6GMZ0R00	M.RESISTOR CH 1/10W 0	1	
R6053-55	ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	3	
R6056,57	ERJ6GMZ0R00	M.RESISTOR CH 1/10W 0	2	
R6058	ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R6059	ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R6060	ERJ6GMYJ183	M.RESISTOR CH 1/10W 18K	1	
R6061	ERJ6GMYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R6063	ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R6065	ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R6067	ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R6071	ERJ6GMYJ101	M.RESISTOR CH 1/10W 100	1	
R6072	ERJ6GMZ0R00	M.RESISTOR CH 1/10W 0	1	
R6073	ERJ6GMYJ101	M.RESISTOR CH 1/10W 100	1	
R6075,76	ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	2	
R6078	ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R6082	ERJ6GMYJ822	M.RESISTOR CH 1/10W 8.2K	1	
R6083	ERJ6GMYJ243	M.RESISTOR CH 1/10W 24K	1	
R7601	ERJ6GMYJ151	M.RESISTOR CH 1/10W 150	1	
R7602,03	ERJ6GMYJ683	M.RESISTOR CH 1/10W 68K	2	
R7604	ERJ6GMYJ151	M.RESISTOR CH 1/10W 150	1	
R7605-09	ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	5	
R7610	ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R7611	ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R7612	ERG2SJ331	M.RESISTOR 2W 330	1	
R7614	ERJ6GMYJ561	M.RESISTOR CH 1/10W 560	1	
R7615	ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R7616	ERG2SJ331	M.RESISTOR 2W 330	1	
R7617	ERJ6GMZ0R00	M.RESISTOR CH 1/10W 0	1	
R7618	ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
T0703	EQV5EC071A	TRANSFORMER	1	
T0704	EQV5EC072A	TRANSFORMER	1	
T0711	EQS5EC032A	TRANSFORMER	1	
T1101	VLI0740	TRANSFORMER	1	<1>
VR301	EVMEASA00B14	V.RESISTOR	1	
VR302	EVMEASA00B53	V.RESISTOR	1	
VR303	EVMEASA00B24	V.RESISTOR	1	
VR0701	EVNCBAA00B24	V.RESISTOR	1	
VR2001	EVNCYAA03B54	V.RESISTOR	1	
VR3012,13	EVNCYAA03B52	V.RESISTOR	2	
VR3014	EVNCYAA03B54	V.RESISTOR	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
X301		VSX0162	CRYSTAL OSCILLATOR	1	
X0701		VLF1178	CRYSTAL OSCILLATOR	1	[SUPPLIED FROM MBV]
X0702		EFCT5R5MS5	CRYSTAL OSCILLATOR	1	
X0703		EFCWS2F11T	CRYSTAL OSCILLATOR	1	
X0704		VLF1138	CRYSTAL OSCILLATOR	1	[SUPPLIED FROM MBV]
X6001		VSX0583	CRYSTAL OSCILLATOR	1	
			MISCELLANEOUS		
		EYF52BC	FUSE HOLDER	2	<!>
		VSC4141	SW SHIELD COVER	1	
		VMP2212	CAPACITOR COVER	3	<!>
		VMD2029	REEL GUIDE	1	
		VMP4471	TV DEMODULATOR ANGLE	1	FOR TV DEMODU. C.B.A.
		ENG47210G	TUNER	1	<!>
		VMD1926	SENSOR LED HOLDER	1	FOR D6001
		VMD1927	PHOTO TR. HOLDER	1	FOR Q6002
	■	VEP06993O	OSD C.B.A.		[SUPPLIED FROM MBV]
					(RTL)
C7701		ECUM1H150JCN	C.CAPACITOR CH 50V 15P	1	
C7702		ECUM1H080DCN	C.CAPACITOR CH 50V 80P	1	
C7703		ECUM1E224ZFN	C.CAPACITOR CH 25V 0.22U	1	
C7704,05		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	2	
C7706		ECUM1H102KBN	C.CAPACITOR CH 50V 1000P	1	
C7707-10		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	4	
C7712		ECEA0JKA470	E.CAPACITOR 6.3V 47U	1	
C7714		ECEA0JKA470	E.CAPACITOR 6.3V 47U	1	
C7720		ECEA0JKA470	E.CAPACITOR 6.3V 47U	1	
C7722		ECEA0JKA470	E.CAPACITOR 6.3V 47U	1	
C7727		ECEA0JKA470	E.CAPACITOR 6.3V 47U	1	
C7729		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C7731		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C7732		ECUM1H102JCN	C.CAPACITOR CH 50V 1000P	1	
C7734		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C7738		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C7740,41		ECUM1H330JCN	C.CAPACITOR CH 50V 33P	2	
C7742		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C7745		ECUM1E224ZFN	C.CAPACITOR CH 25V 0.22U	1	
C7746,47		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	2	
C7748		ECUM1H102JCN	C.CAPACITOR CH 50V 1000P	1	
C7749		ECUM1H473ZFN	C.CAPACITOR CH 50V 0.047U	1	
C7750		ECUM1E224ZFN	C.CAPACITOR CH 25V 0.22U	1	
C7751		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C7753		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C7756		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C7758		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C7761		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C7762		ECEA0JKA470	E.CAPACITOR 6.3V 47U	1	
C7763,64		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	2	
C7765		ECEA0JKA470	E.CAPACITOR 6.3V 47U	1	
C7766,67		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	2	
C7768		ECEA0JKA470	E.CAPACITOR 6.3V 47U	1	
C7769		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C7770		ECUM1H150JCN	C.CAPACITOR CH 50V 15P	1	
C7771		ECUM1H270JCN	C.CAPACITOR CH 50V 27P	1	
C7773		ECUM1C474ZFN	C.CAPACITOR CH 16V 0.47U	1	
C7775		ECUM1H220JCN	C.CAPACITOR CH 50V 22P	1	
C7777		ECEA1CKA100	E.CAPACITOR 16V 10U	1	
C7778		ECKF1H102KB	C.CAPACITOR 50V 1000P	1	
D7701		MA151WA	DIODE	1	
D7704,05		MA151K	DIODE	2	
DL7701		ELBAV026	DELAY	1	[SUPPLIED FROM MBV]
IC7701		M27C512MBCA	IC	1	[SUPPLIED FROM MBV]

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
IC7702		74HCT573D	IC	1	
IC7703		M52055FP	IC	1	
IC7704		ST24C08CB1	IC	1	[SUPPLIED FROM MBV]
IC7705		TDA0501	IC	1	[SUPPLIED FROM MBV]
IC7706		P83C528MAAA	IC	1	[SUPPLIED FROM MBV]
IC7707		D74HC164G	IC	1	
IC7708		SAA5281PM3	IC	1	
IC7709		D74HC161G	IC	1	
K7701		ERJ6GMZOR00	M.RESISTOR CH 1/10W 0	1	
K7704		ERJ6GMZOR00	M.RESISTOR CH 1/10W 0	1	
K7709		ERJ6GMZOR00	M.RESISTOR CH 1/10W 0	1	
K7714		ERJ6GMZOR00	M.RESISTOR CH 1/10W 0	1	
K7716		ERJ6GMZOR00	M.RESISTOR CH 1/10W 0	1	
L7701		ELESE100KA	COIL 10UH	1	
L7702		ELESE3R3KA	COIL 3.3UH	1	
L7705,06		ELESE101KA	COIL 100UH	2	
L7708		ELESE270KA	COIL 27UH	1	
PS7701		VJS3043B010W	CONNECTOR (FEMALE) 9P	1	
PS7702		VJS3043B010W	CONNECTOR (FEMALE) 10P	1	
Q7703,04		MSB709	TRANSISTOR	2	
Q7705		MSD601	TRANSISTOR	1	
Q7711		MSD601	TRANSISTOR	1	
Q7717		MSD601	TRANSISTOR	1	
Q7720		MSD601	TRANSISTOR	1	
Q7722		MSD601	TRANSISTOR	1	
Q7723		MSB709	TRANSISTOR	1	
QR7707		MUN2211	TRANSISTOR-RESISTOR	1	
QR7710		UN2216	TRANSISTOR-RESISTOR	1	
QR7716		UN2215	TRANSISTOR-RESISTOR	1	
QR7719		MUN2113	TRANSISTOR-RESISTOR	1	
R7701		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
R7702		ERJ6GEYJ182	M.RESISTOR CH 1/10W 1.8K	1	
R7705		ERJ6GEYG472	M.RESISTOR CH 1/10W 4.7K	1	
R7707		ERJ6GMZOR00	M.RESISTOR CH 1/10W 0	1	
R7708		ERJ6GEYJ272	M.RESISTOR CH 1/10W 2.7K	1	
R7709		ERJ6GMZOR00	M.RESISTOR CH 1/10W 0	1	
R7711		ERJ6GEYJ272	M.RESISTOR CH 1/10W 2.7K	1	
R7712,13		ERJ6GMZOR00	M.RESISTOR CH 1/10W 0	2	
R7723		ERJ6GEYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R7725		ERJ6GEYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R7727		ERJ6GEYJ181	M.RESISTOR CH 1/10W 180	1	
R7729		ERJ6GEYG472	M.RESISTOR CH 1/10W 4.7K	1	
R7730		ERJ6GEYJ391	M.RESISTOR CH 1/10W 390	1	
R7734		ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	1	
R7736		ERJ6GEYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R7737,38		ERJ6GEYJ221	M.RESISTOR CH 1/10W 220	2	
R7741		ERJ6GEYG472	M.RESISTOR CH 1/10W 4.7K	1	
R7742		ERJ6GEYJ682	M.RESISTOR CH 1/10W 6.8K	1	
R7743		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
R7745		ERJ6GEYJ224	M.RESISTOR CH 1/10W 220K	1	
R7748		ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	1	
R7750		ERJ6GEYJ471	M.RESISTOR CH 1/10W 470	1	
R7751		ERJ6GEYJ392	M.RESISTOR CH 1/10W 3.9K	1	
R7753		ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	1	
R7754		ERJ6GEYJ183	M.RESISTOR CH 1/10W 18K	1	
R7755		ERJ6GEYJ243	M.RESISTOR CH 1/10W 24K	1	
R7756		ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	1	
R7757		ERJ6GEYJ561	M.RESISTOR CH 1/10W 560	1	
R7758		ERJ6GEYJ273	M.RESISTOR CH 1/10W 27K	1	
R7761		ERJ6GEYJ272	M.RESISTOR CH 1/10W 2.7K	1	
R7765		ERJ6GEYJ471	M.RESISTOR CH 1/10W 470	1	
R7768		ERJ6GEYJ122	M.RESISTOR CH 1/10W 1.2K	1	
R7770		ERJ6GMZOR00	M.RESISTOR CH 1/10W 0	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R7772		ERJ6GEYG472	M.RESISTOR CH 1/10W 4.7K	1	
R7774		EXBF9E103J	COMBI.R-R 10K	1	
R7779		ERJ6GEYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R7781-83		ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	3	
R7784,85		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	2	
R7787-89		ERJ6GEYJ101	M.RESISTOR CH 1/10W 100	3	
R7790		ERJ6GEYJ682	M.RESISTOR CH 1/10W 6.8K	1	
R7791		ERJ6GEYJ101	M.RESISTOR CH 1/10W 100	1	
R7794		ERJ6GEYG472	M.RESISTOR CH 1/10W 4.7K	1	
R7795		ERJ6GEYJ101	M.RESISTOR CH 1/10W 100	1	
R7796		ERJ6GEYJ273	M.RESISTOR CH 1/10W 27K	1	
R7797		ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	1	
R7798		ERJ6GEYJ122	M.RESISTOR CH 1/10W 1.2K	1	
R7799		ERJ6GEYG472	M.RESISTOR CH 1/10W 4.7K	1	
X7701		VSX0583	CRYSTAL OSCILLATOR	1	
X7702		VSX0353	CRYSTAL OSCILLATOR	1	
			MISCELLANEOUS		
		VM22373	BARRIER	1	
	■	VEP03B93B	INPUT/OUTPUT C.B.A.		[SUPPLIED FROM MBV]
					(RTL)
C3901		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C3902		ECEA1AKA470I	E.CAPACITOR 10V 47U	1	
C3903		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C3904		ECEA1CKA470	E.CAPACITOR 16V 47U	1	
C3905,06		ECEA1CKA100	E.CAPACITOR 16V 10U	2	
C3909		ECEA1CKA100	E.CAPACITOR 16V 10U	1	
C3910		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C3914		ECEA0JKA101	E.CAPACITOR 6.3V 100U	1	
C3915		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C3916		ECEA1CKA470	E.CAPACITOR 16V 47U	1	
C3917		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C3919		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C4903-08		ECUM1H471JCN	C.CAPACITOR CH 50V 470P	6	
C4911,12		ECUM1H471JCN	C.CAPACITOR CH 50V 470P	2	
D3901		MA4056M	DIODE	1	
D3902		1SS254	DIODE	1	
D3903		MA151A	DIODE	1	
D3907		MA4056M	DIODE	1	
IC3901		MC14053BF	IC	1	
IC3902		MC14052BF	IC	1	
IC3903		MC14051BF	IC	1	
IC3904		BU1210I-02	IC	1	[SUPPLIED FROM MBV]
IC4901		MC14052BF	IC	1	
IC4903		NJM4558M	IC	1	
IC4904		MC14052BF	IC	1	
JK3901,02		VJS1470	21PIN SKIRT JACK	2	
JK3903		VEJ1481	I/O JACK PLATE	1	[SUPPLIED FROM MBV]
K3901		ERJ6GNZOR00	M.RESISTOR CH 1/10W 0	1	
K4905		ERJ6GNZOR00	M.RESISTOR CH 1/10W 0	1	
K4908,09		ERJ6GNZOR00	M.RESISTOR CH 1/10W 0	2	
K4912		ERJ6GNZOR00	M.RESISTOR CH 1/10W 0	1	
L3901		VLQ0599J101	COIL	1	
L3903		VLQ0599J101	COIL	1	
L4901 04		VLQ0599J471	COIL 470UH	4	
P3901		VJS3537B008G	CONNECTOR (FEMALE) 8P	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
PS3901		VJS3042F020W	CONNECTOR (FEMALE)	1	[SUPPLIED FROM MBV]
PS3902		VJS3042B018W	CONNECTOR (FEMALE) 18P	1	
Q3901		MSD601	TRANSISTOR	1	
Q3902		MSB709	TRANSISTOR	1	
Q3903		MSD601	TRANSISTOR	1	
Q3904		MSB709	TRANSISTOR	1	
QR3901		MUN2212	TRANSISTOR-RESISTOR	1	
QR3902		UN2216	TRANSISTOR-RESISTOR	1	
QR3903		MUN2111	TRANSISTOR-RESISTOR	1	
QR3904		MUN2113	TRANSISTOR-RESISTOR	1	
R3901,02		ERJ6GEYJ750	M.RESISTOR CH 1/10W 75	2	
R3903		ERJ6GEYJ683	M.RESISTOR CH 1/10W 68K	1	
R3904		ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	1	
R3905		ERJ6GEYJ331	M.RESISTOR CH 1/10W 330	1	
R3906		ERJ6GEYJ121	M.RESISTOR CH 1/10W 120	1	
R3907		ERJ6GEYJ680	M.RESISTOR CH 1/10W 68	1	
R3908		ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	1	
R3909		ERJ6GEYJ683	M.RESISTOR CH 1/10W 68K	1	
R3910		ERJ6GEYJ331	M.RESISTOR CH 1/10W 330	1	
R3911		ERJ6GEYJ121	M.RESISTOR CH 1/10W 120	1	
R3912		ERJ6GEYJ680	M.RESISTOR CH 1/10W 68	1	
R3913		ERJ6GEYJ223	M.RESISTOR CH 1/10W 22K	1	
R3917		ERJ6GEYJ683	M.RESISTOR CH 1/10W 68K	1	
R3918		ERJ6GEYJ471	M.RESISTOR CH 1/10W 470	1	
R3921		ERJ6GEYJ182	M.RESISTOR CH 1/10W 1.8K	1	
R3923,24		ERJ6GEYJ471	M.RESISTOR CH 1/10W 470	2	
R3925,26		ERJ6GEYJ121	M.RESISTOR CH 1/10W 120	2	
R3930		ERJ6GEYG472	M.RESISTOR CH 1/10W 4.7K	1	
R3932		ERJ6GEYJ223	M.RESISTOR CH 1/10W 22K	1	
R4901		ERJ6GEYJ101	M.RESISTOR CH 1/10W 100	1	
R4902		ERDS2TJ101	C.RESISTOR 1/4W 100	1	
R4903,04		ERJ6GEYJ101	M.RESISTOR CH 1/10W 100	2	
R4909		ERJ6GEYJ683	M.RESISTOR CH 1/10W 68K	1	
R4910		ERJ6GEYJ223	M.RESISTOR CH 1/10W 22K	1	
R4911		ERJ6GNZOR00	M.RESISTOR CH 1/10W 0	1	
R4919		ERJ6GEYJ393	M.RESISTOR CH 1/10W 39K	1	
R4920		ERJ6GEYJ474	M.RESISTOR CH 1/10W 470K	1	
R4921		ERJ6GEYJ101	M.RESISTOR CH 1/10W 100	1	
R4922		ERJ6GEYJ474	M.RESISTOR CH 1/10W 470K	1	
R4923		ERJ6GEYJ393	M.RESISTOR CH 1/10W 39K	1	
R4924		ERJ6GEYJ474	M.RESISTOR CH 1/10W 470K	1	
R4925		ERJ6GEYJ393	M.RESISTOR CH 1/10W 39K	1	
R4926		ERJ6GEYJ474	M.RESISTOR CH 1/10W 470K	1	
R4927		ERJ6GEYJ393	M.RESISTOR CH 1/10W 39K	1	
R4928,29		ERJ6GEYJ474	M.RESISTOR CH 1/10W 470K	2	
R4931		ERJ6GEYJ101	M.RESISTOR CH 1/10W 100	1	
R4933		ERJ6GEYJ101	M.RESISTOR CH 1/10W 100	1	
R4935		ERJ6GEYJ101	M.RESISTOR CH 1/10W 100	1	
R4939		ERJ6GNZOR00	M.RESISTOR CH 1/10W 0	1	
S3901		ESD172311	SWITCH	1	
			MISCELLANEOUS		
		X1V3+8GFZ	SCREW	4	FOR 21PIN SKIRT JACK
	■	VEP04469L	MOTOR DRIVE C.B.A.		[SUPPLIED FROM MBV]
					(RTL)
C2501,02		ECEA1HKA2R2	E.CAPACITOR 50V 2.2U	2	
C2503		ECA1EM470	E.CAPACITOR 25V 47U	1	
C2504		ECEA1HKNR22	E.CAPACITOR 50V 0.22	1	
C2505		ECEA1HKA010	E.CAPACITOR 50V 1U	1	
C2506		ECA1EM470	E.CAPACITOR 25V 47U	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C2507,08		ECUM1E333KBN	C.CAPACITOR CH 25V 0.033U	2	
C2509		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C2510		ECAOJM221	E.CAPACITOR 6.3V 220U	1	
C2511		ECUM1E333KBN	C.CAPACITOR CH 25V 0.033U	1	
C2512		ECQV1H683JM	P.CAPACITOR 50V 0.068U	1	
C2513		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C2514-16		ECUM1E333KBN	C.CAPACITOR CH 25V 0.033U	3	
C2517		ECUM1H680JCN	C.CAPACITOR CH 50V 68P	1	
C2518		ECUM1C474ZFN	C.CAPACITOR CH 16V 0.47U	1	
C2519		ECUM1H680JCN	C.CAPACITOR CH 50V 68P	1	
C2520		ECUM1C474ZFN	C.CAPACITOR CH 16V 0.47U	1	
C2521		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C2523		ECEA1HKAZR2	E.CAPACITOR 50V 2.2U	1	
C2525		ECEAOJKA470	E.CAPACITOR 6.3V 47U	1	
C2527		ECCV1H104JM	P.CAPACITOR 50V 0.1U	1	
C2528-30		ECEA1HKA0R1	E.CAPACITOR 50V 0.1U	3	
C2532-34		ECEA1VKN4R7	E.CAPACITOR 35V 4.7U	3	
C2535		ECUM1H473ZFN	C.CAPACITOR CH 50V 0.047U	1	
C2536		ECEAOJKA101	E.CAPACITOR 6.3V 100U	1	
C2538		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C2540		ECEA1HKAR47	E.CAPACITOR 50V 0.47	1	
C2541		ECUM1H101JCN	C.CAPACITOR CH 50V 100P	1	
C4712		ECUM1H102JCN	C.CAPACITOR CH 50V 1000P	1	
C4713		ECEA1CKA330	E.CAPACITOR 16V 33U	1	
C4714		ECQP1222J2	P.CAPACITOR 100V 2200P	1	
C4715		ECCD2H181J	C.CAPACITOR 500V 180P	1	
C4716		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	1	
C4717		ECUM1H821JCN	C.CAPACITOR CH 50V 820P	1	
C4736		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	1	
C4737		ECUM1H472KBN	C.CAPACITOR CH 50V 4700P	1	
C4738		ECEA1CKA330	E.CAPACITOR 16V 33U	1	
C4739		ECQB1H333JZ	F.CAPACITOR 50V 0.033U	1	
D2501,02		MA165	DIODE	2	
D2504,05		MA700	DIODE	2	
D2506-10		1SS355	DIODE	5	
D4702,03		MA151K	DIODE	2	
IC2501		BA6871S	IC	1	
IC2502		AN3814K	IC	1	
K4707		ERJ6GNZ0R00	M.RESISTOR CH 1/10W 0	1	
K4711		ERJ6GNZ0R00	M.RESISTOR CH 1/10W 0	1	
L2503		VLP0083	COIL	1	
L4702		ELESE471KA	COIL	1	
L4704		ELESE101KA	COIL 100UH	1	
L4707,08		VLP0150	INDUCTOR	2	
P2003		VJP3502	CONNECTOR (MALE)	1	
P2004		VJP1237T	CONNECTOR (MALE) 10P	1	
P2501		VJS3537A015G	CONNECTOR (FEMALE) 15P	1	
P4002		VJSZ329	CONNECTOR (FEMALE)	1	
P4003		VJP1230T	CONNECTOR (MALE) 3P	1	
PS2501		VJS3042B017W	CONNECTOR (FEMALE) 17P	1	
PS4701		VJS3042B011W	CONNECTOR (FEMALE) 11P	1	
Q4701		2SD602A-R	TRANSISTOR	1	
Q4703		2SB1320A-R	TRANSISTOR	1	
Q4706		2SB709A-R	TRANSISTOR	1	
Q4707		2SD602A-R	TRANSISTOR	1	
QR4702,03		MUN2214	TRANSISTOR-RESISTOR	2	
R2501		ERJ6GMYG821	M.RESISTOR CH 1/10W 820	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R2502		ERJ6GMYG681	M.RESISTOR CH 1/10W 680	1	
R2503,04		ERDS2TJ560	C.RESISTOR 1/4W 56	2	
R2505		ERDS1TJ561	C.RESISTOR 1/2W 560	1	
R2506		ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R2507		ERJ6GMYG432	M.RESISTOR CH 1/10W 4.3K	1	
R2508		ERJ6GMYG473	M.RESISTOR CH 1/10W 47K	1	
R2509		ERJ6GMYJ684	M.RESISTOR CH 1/10W 680K	1	
R2510		ERJ6GMYG103	M.RESISTOR CH 1/10W 10K	1	
R2511		ERJ6GMYG133	M.RESISTOR CH 1/10W 13K	1	
R2512		ERJ6GMYJ105	M.RESISTOR CH 1/10W 1M	1	
R2513,14		ERJ6GMYJ472	M.RESISTOR CH 1/10W 4.7K	2	
R2515		ERJ6GMYJ105	M.RESISTOR CH 1/10W 1M	1	
R2516		ERJ6GMYJ392	M.RESISTOR CH 1/10W 3.9K	1	
R2517		ERJ6GMYJ105	M.RESISTOR CH 1/10W 1M	1	
R2518		ERJ6GMYJ392	M.RESISTOR CH 1/10W 3.9K	1	
R2519		ERDS2TJ560	C.RESISTOR 1/4W 56	1	
R2520		ERX12SJR47	M.RESISTOR 1/2W 0.47	1	
R2521,22		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	2	
R2523		ERDS2TJ122	C.RESISTOR 1/4W 390	1	
R2524-26		ERDS2TJ150	C.RESISTOR 1/4W 33	3	
R2527		ERDS2FJ1R5	C.RESISTOR 1/4W 1.5	1	
R2528		ERDS2FJ1R2	C.RESISTOR 1/4W 1.2	1	
R2529		ERJ6GNZ0R00	M.RESISTOR CH 1/10W 0	1	
R2530		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R2531		ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R2532		ERJ6GNZ0R00	M.RESISTOR CH 1/10W 0	1	
R2533		ERJ6GMYJ563	M.RESISTOR CH 1/10W 56K	1	
R2534		ERJ6GMYJ683	M.RESISTOR CH 1/10W 68K	1	
R4710		ERJ6GMYJ432	M.RESISTOR CH 1/10W 4.3K	1	
R4715		ERJ6GMYJ153	M.RESISTOR CH 1/10W 15K	1	
R4722		ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	1	
R4723		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R4735		ERJ6GMYJ100	M.RESISTOR CH 1/10W 10	1	
R4736		ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	1	
R4737		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R4738		ERJ6GMYJ333	M.RESISTOR CH 1/10W 33K	1	
T4701		EIQ7QPC13Q	TRANSFORMER	1	
T4702		EIQ7QPU12Q	TRANSFORMER	1	
VR2006		EVNDCAA03B15	V.RESISTOR	1	
VR2011		EVNDCAA03B15	V.RESISTOR	1	
VR4001		EVNDCAA03B15	V.RESISTOR	1	
			MISCELLANEOUS		
		VEE9091	WIRE CABLE	1	(P2003-POWER TR.)
		VEE9112	WIRE CABLE	1	(P4003-FE HEAD)
		VWJ0868	FLAT CARD CABLE	1	(P2501-CAPSTAN)
		VEE9192	WIRE CABLE	1	[SUPPLIED FROM NBV]
					(P2004-CYLINDER)
	▲	VEP05102GPE	HEAD AMP C.B.A.		[SUPPLIED FROM NBV]
					(RTL)
C503		ECUM1H680JCN	C.CAPACITOR CH 50V 68P	1	
C505		ECUM1H181JCN	C.CAPACITOR CH 50V 180P	1	
C508		ECUM1H220JCN	C.CAPACITOR CH 50V 22P	1	
C509		ECEAOJK470	E.CAPACITOR 6.3V 47U	1	
C510		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C511		ECUM1H560JCN	C.CAPACITOR CH 50V 56P	1	
C512		ECUM1H080DCN	C.CAPACITOR CH 50V 80P	1	
C513		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C514		ECUM1H223ZFN	C.CAPACITOR CH 50V 0.022U	1	
C515,16		ECUM1H102KBN	C.CAPACITOR CH 50V 1000P	2	
C517		ECUM1H681JCN	C.CAPACITOR CH 50V 680P	1	
C518		ECEA1HK010	E.CAPACITOR 50V 1U	1	
C519		ECUX1C105ZFM	E.CAPACITOR CH 16V 1U	1	
C520,21		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.1U	2	
C528		ECUM1H102KBN	C.CAPACITOR CH 50V 1000P	1	
C529		ECUM1H223ZFN	C.CAPACITOR CH 50V 0.022U	1	
C530		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
C533	ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C534,35	ECUM1H223ZFN	C.CAPACITOR CH 50V 0.022U	2	
C536,37	ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	2	
C540	ECUM1H223ZFN	C.CAPACITOR CH 50V 0.022U	1	
C541	ECUM1H102KBN	C.CAPACITOR CH 50V 1000P	1	
C542,43	ECUM1H223ZFN	C.CAPACITOR CH 50V 0.022U	2	
D501-04	1SS254	DIODE	4	
IC501	TEA5705	IC	1	[SUPPLIED FROM MBV]
K501	ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	1	
K502	ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	1	
K506	ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	1	
K510	ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	1	
L501	ELESN820KA	COIL H	1	
L506	ELESE151K	COIL 150UH	1	
L508	ELESE330KA	COIL 33UH	1	
L509	ELESE270KA	COIL 27UH	1	
L510	ELESE101KA	COIL 100UH	1	
P501	VJS1684	CONNECTOR (FEMALE)	1	
PS002	VJS3069	CONNECTOR (FEMALE)	1	
Q502	2SB709	TRANSISTOR	1	
Q503	2SC2295	TRANSISTOR	1	
Q504	2SB709	TRANSISTOR	1	
QR502	UN2212	TRANSISTOR-RESISTOR	1	
R505	ERJ6GEYJ561	M.RESISTOR CH 1/10W 560	1	
R507	ERJ6GEYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R509	ERJ6GEYJ681	M.RESISTOR CH 1/10W 680	1	
R510	ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	1	
R512	ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	1	
R513	ERJ6GEYJ391	M.RESISTOR CH 1/10W 390	1	
R514,15	ERJ6GEYJ561	M.RESISTOR CH 1/10W 560	2	
R516	ERJ6GEYJ101	M.RESISTOR CH 1/10W 100	1	
R517	ERJ6GEYJ392	M.RESISTOR CH 1/10W 3.9K	1	
R518	ERJ6GEYJ682	M.RESISTOR CH 1/10W 6.8K	1	
R519	ERJ6GEYJ272	M.RESISTOR CH 1/10W 2.7K	1	
R520	ERJ6GEYJ180	M.RESISTOR CH 1/10W 18	1	
R521	ERJ6GEYJ272	M.RESISTOR CH 1/10W 2.7K	1	
R522	ERJ6GEYJ681	M.RESISTOR CH 1/10W 680	1	
R523,24	ERJ6GEYJ561	M.RESISTOR CH 1/10W 560	2	
R525	ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	1	
R526	ERJ6GEYJ100	M.RESISTOR CH 1/10W 10	1	
R527	ERJ6GEYJ223	M.RESISTOR CH 1/10W 22K	1	
R528	ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
R529	ERJ6GEYJ100	M.RESISTOR CH 1/10W 10	1	
R530,31	ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	2	
R533	ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
R534	ERJ6GEYJ271	M.RESISTOR CH 1/10W 270	1	
R535	ERJ6GEYJ272	M.RESISTOR CH 1/10W 2.7K	1	
R536	ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	1	
R537	ERJ6GEYJ561	M.RESISTOR CH 1/10W 560	1	
R539,40	ERJ6GEYJ681	M.RESISTOR CH 1/10W 680	2	
R541	ERJ6GEYJ101	M.RESISTOR CH 1/10W 100	1	
VR501	EVNDCAA03B23	V.RESISTOR	1	
VR502	EVNDCAA03B13	V.RESISTOR	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
		MISCELLANEOUS		
	VSC3768	SHIELD COVER (TOP)	1	
	VSC3769	SHIELD COVER (MAIN)	1	[SUPPLIED FROM MBV]
	VSC3770	SHIELD COVER (BOTTOM)	1	
	VEPO7775B	TIMER C.B.A.		[SUPPLIED FROM MBV] (RTL)
C7502	ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C7504	ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C7507	ECEAOJKA470	E.CAPACITOR 6.3V 47U	1	
C7508	ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C7509	ECEA1HKA100	E.CAPACITOR 50V 10U	1	
C7510	ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C7511	ECUM1H560JCN	C.CAPACITOR CH 50V 56P	1	
C7513	ECUM1H270JCN	C.CAPACITOR CH 50V 27P	1	
C7514	ECUM1H220JCN	C.CAPACITOR CH 50V 22P	1	
C7515	ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C7516	ECAOJM221	E.CAPACITOR 6.3V 220U	1	
C7517	VCE0073	E.CAPACITOR	1	
C7525	ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C7531	ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C7533-35	ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	3	
C7536,37	ECKF1H103ZF	C.CAPACITOR 50V 0.01U	2	
D7501	1SS254	DIODE	1	
D7503-08	1SS254	DIODE	6	
D7509	HLMK-D215	DIODE	1	[SUPPLIED FROM MBV]
D7510,11	1SS254	DIODE	2	
D7516	1SS254	DIODE	1	
D7518,19	1SS254	DIODE	2	
D7526	1SS254	DIODE	1	
D7529	1SS254	DIODE	1	
D7531	1SS254	DIODE	1	
D7532	MA4220	DIODE	1	
D7533	MA723WT	DIODE	1	
D7541	HLMK-D315	DIODE	1	
D7542	1SS254	DIODE	1	
D7546	1SS254	DIODE	1	
D7556	MA165	DIODE	1	
DP7501	VSL0341	DISPLAY TUBE	1	[SUPPLIED FROM MBV]
IC7501	M37509V6AD	IC	1	[SUPPLIED FROM MBV]
IC7504	PST7023	IC	1	
IC7505	S80743AL	IC	1	
IR7501	RPM675CBRX10	IR RECEIVER UNIT	1	
K7502,03	ERJ6GMZOR00	M.RESISTOR CH 1/10W 0	2	
P7501	VJS3537B032G	CONNECTOR (FEMALE) 32P	1	
P7502	VJS3537B006G	CONNECTOR	1	[SUPPLIED FROM MBV]
P7503	VJS3301	CONNECTOR (FEMALE)	1	
PP7501	VJP3405A009W	CONNECTOR (MALE) 9P	1	
QR7501	MUN2112	TRANSISTOR-RESISTOR	1	
QR7503	MUN2211	TRANSISTOR-RESISTOR	1	
QR7504	MUN2111	TRANSISTOR-RESISTOR	1	
QR7505-08	MUN2113	TRANSISTOR-RESISTOR	4	
R7501-03	ERJ6GMYJ221	M.RESISTOR CH 1/10W 220	3	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R7505		ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R7506-10		ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	5	
R7512		ERJ6GMYJ221	M.RESISTOR CH 1/10W 220	1	
R7513		ERJ6GMYJ132	M.RESISTOR CH 1/10W 1.3K	1	
R7514		ERJ6GMYJ221	M.RESISTOR CH 1/10W 220	1	
R7515		ERDS2TJ470	C.RESISTOR 1/4W 47	1	
R7516		ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R7518		ERJ6GMYJ221	M.RESISTOR CH 1/10W 220	1	
R7519		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R7520,21		ERJ6GMYJ221	M.RESISTOR CH 1/10W 220	2	
R7535		ERJ6GMYJ132	M.RESISTOR CH 1/10W 1.3K	1	
R7536		ERDS2TJ8R2	C.RESISTOR 1/4W 8.2	1	
R7537		ERJ6GMYJ151	M.RESISTOR CH 1/10W 150	1	
R7538		ERJ6GMYJ221	M.RESISTOR CH 1/10W 220	1	
R7539		ERJ6GMYJ101	M.RESISTOR CH 1/10W 100	1	
R7540		ERJ6GMYJ331	M.RESISTOR CH 1/10W 330	1	
R7541		ERJ6GMYJ221	M.RESISTOR CH 1/10W 220	1	
R7542		ERJ6GMYJ224	M.RESISTOR CH 1/10W 220K	1	
R7545		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R7546		ERJ6GMYJ181	M.RESISTOR CH 1/10W 180	1	
R7548		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R7552		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R7555,56		ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	2	
R7558		ERJ6GMYJ221	M.RESISTOR CH 1/10W 220	1	
R7559		ERJ6GMYJ473	M.RESISTOR CH 1/10W 47K	1	
S7501-09		EVQ11409K	SWITCH	9	
S7510		VSQ0822	SWITCH	1	
S7512,13		EVQ11409K	SWITCH	2	
VC7501		ECRHA010A54R	V.CAPACITOR	1	
VR7501		EVUF3AE20B24	V.RESISTOR 20K	1	
X7501		VSX0608	CRYSTAL OSCILLATOR	1	
X7502		VSX0094	CRYSTAL OSCILLATOR	1	
			MISCELLANEOUS		
		VJF1148	FIP HOLDER	1	[SUPPLIED FROM MBV]
		VMD1047	LED HOLDER	2	
		VMD2035	JOG HOLDER	1	
		VMD2247	IR RECEIVER HOLDER	1	
	■	VEP05995B	OPERATION C.B.A.		[SUPPLIED FROM MBV]
					(RTL)
C6502		ECUM1H821JCN	C.CAPACITOR CH 50V 820P	1	
C6503		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C6504		ECUM1H472KBN	C.CAPACITOR CH 50V 4700P	1	
C6506		ECEA1CKA100	E.CAPACITOR 16V 10U	1	
C6507		ECUM1H101JCN	C.CAPACITOR CH 50V 100P	1	
C6508		ECEA1CKA220	E.CAPACITOR 16V 22U	1	
C6509		ECEA1CKA100	E.CAPACITOR 16V 10U	1	
C6510		ECEA1CKA470	E.CAPACITOR 16V 47U	1	
C6512		ECKF1H1032F	C.CAPACITOR 50V 0.01U	1	
D6502		MA4051-L	DIODE	1	
D6503-06		1SS254	DIODE	4	
IC6501		M5220FP	IC	1	
JK6501		VJJ0169	JACK	1	
JK6502		VJJ0417	JACK	1	[SUPPLIED FROM MBV]
JK6505		VJJ0263	JACK	1	[SUPPLIED FROM MBV]

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
L6502		ELESE102KA	COIL 1000UH	1	
P6501		VJS3537B008G	CONNECTOR (FEMALE) 8P	1	
P6501		VJS3405A009A	CONNECTOR (FEMALE) 9P	1	
R6501		ERJ6GMYJ750	M.RESISTOR CH 1/10W 75	1	
R6503		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R6504		ERJ6GMYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R6505		ERJ6GMYJ471	M.RESISTOR CH 1/10W 470	1	
R6506		ERJ6GMYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R6507		ERJ6GMYJ153	M.RESISTOR CH 1/10W 15K	1	
R6508		ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R6509,10		ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	2	
R6511		ERJ6GMYJ151	M.RESISTOR CH 1/10W 150	1	
R6512		ERJ6GMYJ473	M.RESISTOR CH 1/10W 47K	1	
R6513,14		ERDS2TJ102	C.RESISTOR 1/4W 1K	2	
R6515,16		ERJ6GMYJ104	M.RESISTOR CH 1/10W 100K	2	
S6501,02		EVQ11409K	SWITCH	2	
	■	VEP00V29A	MAIN INTERFACE C.B.A.		[SUPPLIED FROM MBV]
					(RTL)
PS1501		VJS3043B003W	CONNECTOR (FEMALE) 3P	1	
PS6005		VJS3043B003W	CONNECTOR (FEMALE) 3P	1	
	■	VEP00V88A	S-TAB C.B.A.		[SUPPLIED FROM MBV]
					(RTL)
PP1501		VJP3043A003W	CONNECTOR (MALE) 3P	1	
Q1501		PN205L-NC.VT	PHOTO TRANSISTOR	1	
S1501		VES0695	S-TAB SW	1	
			MISCELLANEOUS		
		VMD1927	PHOTO TR. HOLDER	1	
	■	VEP00D18B	RT CONNECTION C.B.A.		(RTL)
			MISCELLANEOUS		
		VJP3069	CONNECTOR (MALE) 8P	1	
	■	----------	MOTOR C.B.A.		
			MISCELLANEOUS		
		VJP3316B002	CONNECTOR (FEMALE) 2P	1	

INTERNAL REFERENCE CODES

NOTE: This chart is only for internal reference.
Do not order any parts according to these codes.

P. C. B.	FILM CODE
MAIN SYUGO	H0A001-0317A
LUMINANNCE & CHROMINANCE	H0A000-03D27
ĆNR	H0A000-08171
OSD	H0A002-06993
INPUT/OUTPUT	H0A000-03B93
TIMER SYUGO	H0A000-0319A
TV DEMODULATOR	H0A000-07801
MOTOR DRIVE	H0A001-04469
HEAD AMP	H0A001-05180
LOADING MOTOR	H0A000-00S75

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